

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

EPA Region 5 Records Ctr.



278937

RECORD OF DECISION

Outboard Marine Corporation Superfund Site
Waukegan, Lake County, Illinois



Selected Remedial Alternatives for the OMC Plant 2 Site (Operable Unit #4)

August 2007

Cover photo credit: City of Waukegan, courtesy of John Moore, Eng. Dept.

This February 2006 aerial photo shows the entire Outboard Marine Corporation (OMC) Superfund site in Waukegan, Illinois. North is at the top of the frame. The OMC site includes the (northern) Waukegan Harbor site, the OMC Plant 2 (or “North Plant”) site (the large building at the top of the photo), and the Waukegan Manufactured Gas and Coke Plant site (cleared area in center of frame). Lake Michigan can be seen to the east of the sand dune and beach areas.

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DECLARATION

Selected Remedial Alternatives for the
OMC Plant 2 Site - Operable Unit #4 of the

Outboard Marine Corporation Site
Waukegan, Lake County, Illinois

Statement of Basis and Purpose

This decision document presents the selected remedial actions for the Outboard Marine Corporation (OMC) Plant 2 site, Operable Unit #4 of the OMC Superfund site, Waukegan, Lake County, Illinois (CERCLIS identification number ILD000802827). The United States Environmental Protection Agency (U.S. EPA), in consultation with the Illinois Environmental Protection Agency (IL EPA), chose the remedies in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Our decisions are based on the Administrative Record for the OMC Plant 2 site.

Assessment of the Site

The response actions selected in this Record of Decision (ROD) are necessary to protect the public health or welfare or the environment from the actual or threatened release of hazardous substances, pollutants, or contaminants into the environment.

Description of the Selected Remedy

U.S. EPA has identified four media of concern at the OMC Plant 2 site. These are the OMC Plant 2 building, soil and sediment, groundwater, and dense, non-aqueous phase liquid (DNAPL) deposits. The selected cleanup actions herein are the first remedial actions for the OMC Plant 2 site and only address the OMC Plant 2 building and the soil and sediment media. We plan to address the groundwater and DNAPL media in about a year in a subsequent ROD for the OMC Plant 2 site, following the conclusion of treatability testing for these media. The groundwater and DNAPL cleanup remedies are projected to be the final remedial actions for the OMC site.

The selected remedial actions for the soil and sediment and building media include:

- the excavation of soil and sediment which exceed 1 mg/kg (ppm) polychlorinated biphenyls (PCBs) and/or 2 ppm polyaromatic hydrocarbons (PAHs)
- the demolition of the PCB-impacted portions of the OMC Plant 2 building
- the off-site disposal into appropriate licensed facilities of excavated soil and sediment and non-recyclable building debris
- the replacement of excavated material with clean soil fill to grade

Material containing PCBs at 50 ppm or higher will be disposed of at a facility that is in compliance with Toxic Substance Control Act (TSCA) regulations and the remainder (containing less than 50 ppm PCBs) will be disposed of in a facility that is in compliance with 35 Illinois Administrative Code (IAC) Section 811 (a “municipal landfill”).

Upon implementation, the selected remedial actions will allow for unlimited use of the cleaned site areas and unrestricted exposure to residual PCB and/or PAH contaminants. No institutional controls will be needed to maintain protectiveness because all materials will be disposed of off-site.

The NCP establishes an expectation that U.S. EPA will use treatment technology to address the principal threats at a site wherever practicable. We consider the soil and sediment and building media at the OMC Plant 2 site to present low level, long term threats to human health or the environment and to not be principal threats. Thus, the statutory preference for treatment as a principal element would not apply. We do consider the DNAPL media to be a principal threat waste and we plan to address it appropriately in the subsequent ROD for the OMC Plant 2 site.

Statutory Determinations

The selected remedial actions are protective of human health and the environment, comply with federal and State of Illinois requirements that are applicable or relevant and appropriate to the remedial actions, are cost-effective, and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. The selected remedies herein do not satisfy the statutory preference for treatment as a principal element of the remedy because the soil and sediment and building media do not constitute principal threats at the site. Selected remedial actions in the subsequent ROD for the OMC Plant 2 site will meet the statutory preference for treatment, however.

U.S. EPA will not need to perform a statutory five-year review of the selected remedial actions for the OMC Plant 2 operable unit to determine whether the remedies are or will be protective of human health and the environment because the off-site disposal of the PCB- and PAH-containing materials will result in no hazardous substances, pollutants, or contaminants remaining on site in excess of levels allowing for unlimited use and unrestricted exposure. We will continue to perform statutory five-year reviews of the selected remedial actions for the OMC site as a whole, though, as cleanups at individual operable units may have left or will leave hazardous substances, pollutants, or contaminants remaining on site in excess of levels allowing for unlimited use and unrestricted exposure.


ROD Data Certification Checklist

U.S. EPA has included the following information in the Decision Summary section of the OMC Plant 2 site ROD. More detailed site information is included in the Administrative Record for the OMC Plant 2 site (see Page viii).

- The contaminants of concern and their concentration levels (see Page 18)
- Baseline risks represented by the contaminants of concern (see Page 21)
- Cleanup levels established for the contaminants of concern and the basis for these levels (see Page 22)
- How source materials constituting principal threats are addressed (see Page 30)
- Potential land use that will be available at the site as a result of the selected remedy (future groundwater use to be determined in a subsequent ROD) (see Page 33)
- Estimated capital and operation and maintenance costs for the remedy, including present worth and discount rates (see Page 34)
- Key factor(s) that led to selection of the remedial actions for the OMC Plant 2 operable unit (see Page 34 – Statutory Determinations)

State Concurrence

The State of Illinois has indicated its intention to concur with the selected remedy. The Letter of Concurrence will be attached to this Record of Decision upon receipt.

Approved by:		<u>9-10-07</u>
	Richard C. Karl, Director Superfund Division	Date

OMC Plant 2: **Administrative Record List of Documents**

<u>Item</u>	<u>Date</u>
1. Final Removal Action Letter Report – OMC site Author: STN Environmental	Nov. 21, 2006
2. PCB Soil Contamination Site Assessment – OMC site Author: Tetra Tech EMI	Oct. 7, 2005
3. PCB Soil Removal Action Report – OMC site Author: Tetra Tech EMI	June 1, 2006
4. Field Sampling Plan – OMC Plant 2..... Author: CH2M Hill	Nov. 2004
5. Quality Assurance Project Plan – Remedial Investigation – OMC Plant 2 Author: CH2M Hill	Jan. 2005
6. Data Evaluation Report – RI/FS – OMC Plant 2 Author: CH2M Hill	Oct. 2005
7. Remedial Alternatives Tech Memo – OMC Plant 2..... Author: CH2M Hill	April 2006
8. Remedial Investigation Report – OMC Plant 2 Author: CH2M Hill	April 2006
9. Remedial Investigation Report – (Compact disk)..... Author: CH2M Hill	“Released June 29, 2006.”
10. Feasibility Study Report – OMC Plant 2..... Author: CH2M Hill	Dec. 2006.
11. Proposed Plan Fact Sheet..... Author: U.S. EPA	Jan. 2007
12. Estimation of Potential Risk to Industrial Workers – OMC Plant 2 Author: CH2M Hill	Nov. 16, 2006
13. Transcript – Public Meeting/Hearing – OMC Plant 2 Author: CH2M Hill	Jan. 2007
14. Supplemental Quality Assurance Project Plan – OMC Plant 2 Author: CH2M Hill Also includes U.S. EPA approval memo (For groundwater pilot study test.)	Jan. 2007 Feb. 2007

OMC Plant 2: **Administrative Record List of Documents**

<u>Item</u>	<u>Date</u>
15. Supplemental Field Sampling Plan – OMC Plant 2..... Author: CH2M Hill (For groundwater pilot study test.)	Jan. 2007
16. Public comments on Proposed Plan – OMC Plant 2..... Various authors; via e-mail or letter.	Jan.–Feb. 2007
17. Estimated Cost for Subtitle D Landfill Cover – OMC Plant 2 Author: CH2M Hill	Aug. 8, 2007
18. Concurrence letter – OMC Plant 2 ROD Illinois Environmental Protection Agency	Sept. 2007
19. (Memorandum from IEPA discussing 811 requirements) Illinois Environmental Protection Agency	pending

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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217-524-1655

September 28, 2007

Ms. Wendy L. Carney
United States Environmental Protection Agency
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Mail Code S-5J
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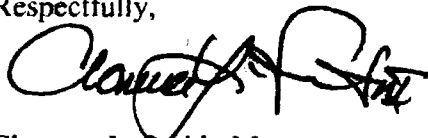
Re: 0971900017 - Lake County
Outboard Marine Corporation
Plant 2 Operable Unit 4
ILD 000 802 827
Superfund/Technical Reports

Dear Ms. Carney:

The purpose of this letter is to transmit the formal concurrence of the State of Illinois the Record of Decision (ROD) for the Outboard Marine Corporation Plant 2 Operable Unit 4 of the Outboard Marine Corporation National Priorities List (NPL) Site in Waukegan, Lake County, Illinois.

If you should have any questions, need any additional information, or require any assistance regarding this matter, please contact me at 217-524-1655 or via electronic mail at: clarence.smith@epa.state.il.us.

Respectfully,



Clarence L. Smith, Manager
Federal Site Remediation Section
Division of Remediation Management
Bureau of Land

Attachments

DECLARATION FOR THE RECORD OF DECISION

Outboard Marine Corporation National Priorities List Site Selected Remedial Alternatives for the OMC Plant 2 Site - Operable Unit 4 Waukegan, Lake County, Illinois

SITE NAME AND LOCATION

Outboard Marine Corporation National Priorities List Site
Outboard Marine Corporation Plant 2 - Operable Unit 4
0971900017 - Lake County
CERCLIS Identification Number ILD 000802827
Waukegan, Illinois

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial actions for the Outboard Marine Corporation (OMC) Plant 2 National Priorities List (NPL) site, Operable Unit 4 located in Waukegan, Lake County, Illinois (CERCLIS identification number ILD000802827). The United States Environmental Protection Agency (USEPA), in consultation with the Illinois Environmental Protection Agency (Illinois EPA), chose the remedies in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA or Superfund), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP, 40 Code of Federal Regulations (CFR) 300-399). This decision is based on the Administrative Record for the OMC Plant 2 NPL site.

This declaration indicates the State of Illinois concurrence with selection of Alternatives 2S and 2B - Excavation of Soil and Sediment and Building Demolition with Off-site Disposal to clean up the soil and sediment and the building media at the OMC Plant 2 site at this time. When USEPA receives the state's letter of concurrence, it will be attached to the Record of Decision (ROD).

ASSESSMENT OF THE SITE

The response actions selected in this ROD are necessary to protect the public health or welfare or the environment from the actual or threatened release of hazardous substances, pollutants, or contaminants into the environment.

DESCRIPTION OF THE SELECTED REMEDY

USEPA has identified four media of concern at the OMC Plant 2 site. These are the OMC Plant 2 building, soil and sediment, groundwater, and dense, non-aqueous phase liquid (DNAPL) deposits. The selected cleanup actions herein are the first remedial actions for the OMC Plant 2

DECLARATION FOR THE RECORD OF DECISION

Concurrence of the Illinois Environmental Protection Agency

Outboard Marine Corporation National Priorities List Site Operable Unit 4

0971900017 - Lake County

ILD 000802827

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site and only address the OMC Plant 2 building and the soil and sediment media. USEPA and Illinois EPA plan to address the groundwater and DNAPL media in about a year in a subsequent ROD for the OMC Plant 2 site, following the conclusion of treatability testing for these media. The groundwater and DNAPL cleanup remedies are projected to be the final remedial actions for the OMC site.

The selected remedial actions for the soil and sediment and building media include:

- The excavation of soil and sediment which exceed 1 milligram per kilogram (mg/kg) or parts per million (ppm) of polychlorinated biphenyls (PCBs) and/or 2 ppm polycyclic aromatic hydrocarbons (PAHs);
- The demolition of the PCB-impacted portions of the OMC Plant 2 building
- The off-site disposal into appropriate licensed facilities of excavated soil and sediment and non-recyclable building debris;
- The replacement of excavated material with clean soil fill to grade.

Material containing PCBs at 50 ppm or higher will be disposed of at a facility that is in compliance with Toxic Substance Control Act of 1976, as amended (TSCA) regulations and the remainder (containing less than 50 ppm PCBs) will be disposed of in a facility that is in compliance with 35 Illinois Administrative Code (IAC) Section 811 (a Resource Conservation and Recovery Act of 1976, as amended (RCRA) Subtitle D landfill).

Upon implementation, the selected remedial actions will allow for unlimited use of the cleaned site areas and unrestricted exposure to residual PCB and/or PAH contaminants. No institutional controls will be needed to maintain protectiveness because all materials will be disposed of off-site.

The NCP establishes an expectation that USEPA will use treatment technology to address the principal threats at a site wherever practicable. Illinois EPA considers the soil and sediment and building media at the OMC Plant 2 site to present low level, long term threats to human health or the environment and to not be principal threats. Thus, the statutory preference for treatment as a principal element would not apply. Illinois EPA does consider the DNAPL media to be a principal threat waste and we plan to address it in conjunction with USEPA appropriately in a subsequent ROD for the OMC Plant 2 site.

DECLARATION FOR THE RECORD OF DECISION

Concurrence of the Illinois Environmental Protection Agency

Outboard Marine Corporation National Priorities List Site Operable Unit 4

0971900017 - Lake County

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STATUTORY DETERMINATIONS

The selected remedial actions are protective of human health and the environment, comply with federal and State of Illinois requirements that are applicable or relevant and appropriate to the remedial actions, are cost-effective, and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. The selected remedies herein do not satisfy the statutory preference for treatment as a principal element of the remedy because the soil and sediment and building media do not constitute principal threats at the site. Selected remedial actions in the subsequent ROD for the OMC Plant 2 site will meet the statutory preference for treatment, however.

USEPA will not need to perform a statutory five-year review of the selected remedial actions for the OMC Plant 2 operable unit to determine whether the remedies are or will be protective of human health and the environment because the off-site disposal of the PCB- and PAH-containing materials will result in no hazardous substances, pollutants, or contaminants remaining on site in excess of levels allowing for unlimited use and unrestricted exposure. Five-year statutory reviews of the selected remedial actions for the OMC site as a whole will continue to perform though, as remedial actions at individual operable units have left or will leave hazardous substances, pollutants, or contaminants remaining on site in excess of levels allowing for unlimited use and unrestricted exposure.

ROD DATA CERTIFICATION CHECKLIST

USEPA has included the following information in the Decision Summary section of the OMC Plant 2 site ROD. More detailed site information is included in the Administrative Record for the OMC Plant 2 site (please refer to Page viii of the Administrative Record).

- The contaminants of concern and their concentration levels (Page 18)
- Baseline risks represented by the contaminants of concern (Page 21)
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DECLARATION FOR THE RECORD OF DECISION

Concurrence of the Illinois Environmental Protection Agency

Outboard Marine Corporation National Priorities List Site Operable Unit 4

0971900017 – Lake County

ILD 000802827

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- Key factor(s) that led to selection of the remedial actions for the OMC Plant 2 operable unit (Page 34 – Statutory Determinations)

AUTHORIZING SIGNATURE

Douglas P. Scott
Douglas P. Scott, Director *by w. e. child*

Illinois Environmental Protection Agency

9-28-07
Date

Glossary

OMC Plant 2 Site Waukegan, Lake County, Illinois

Note: The following terms or expressions may be used throughout this document:

Carcinogenic risk: The incremental probability that an individual will develop cancer over a lifetime as a result of exposure to a carcinogen. A risk number is usually expressed in scientific notation (e.g., 1×10^{-6}) and is referred to as an “excess lifetime cancer risk” (or “ELCR”) because it would be in addition to the risk that individuals face of developing cancer from other potential causes such as smoking or exposure to too much sun. An excess lifetime cancer risk of 1×10^{-6} indicates that an individual experiencing the reasonable maximum exposure to a carcinogen at a site has an extra one in one million chance of developing cancer over his/her lifetime. (The probability of an individual in the U.S. developing cancer from all other causes has been estimated to be as high as one in three.) U.S. EPA generally cleans up Superfund sites to achieve a carcinogenic risk range of 1×10^{-4} to 1×10^{-6} excess lifetime cancer risk.

Gram (g): Metric unit of mass and weight measurement (about 28.3 grams equal one ounce).

Hazard Index (HI) Quotient: The ratio between the amount of a non-carcinogenic chemical contaminant that an individual may be exposed to at a site to the amount of the contaminant that causes an adverse toxic reaction within the body. An HI quotient of 1 or more means that there is enough contaminant at the site to cause a toxic reaction in a person should one be exposed to the contaminant. U.S. EPA generally cleans up Superfund sites to achieve a HI quotient of less than 1 for non-carcinogenic compounds.

Kilogram (kg): Metric unit of mass and weight measurement equal to 1000 grams (about 2.2 pounds or about 1 liter of pure water).

Liter (L): Metric unit of volume measurement (about 3.78 liters equal one gallon).

Micro (μ): Prefix denoting one millionth part of something. Example: 1 microgram (μg) is one millionth of a gram.

Milli (m): Prefix denoting one thousandth part of something. Example: 1 milligram (mg) is one thousandth of a gram.

Operable Unit (OU): U.S. EPA sometimes divides up a complex cleanup site into discrete portions, termed operable units, to better manage the overall cleanup action. At the OMC site, OU #1 is the Waukegan Harbor site, OU #2 is the Waukegan Coke Plant site, OU #3 is the PCB Containment Cells, and OU #4 is the OMC Plant 2 site.

Acronyms and Abbreviations

µg/100 cm ²	Micrograms per 100 square centimeters
µg/kg	Micrograms per kilogram
ARAR	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
CFR	Code of Federal Regulations
COC	Contaminant of concern
DNAPL	Dense nonaqueous phase liquid
ELCR	Excess lifetime cancer risk
FR	<i>Federal Register</i>
FS	Feasibility Study
HI	Hazard Index
IAC	Illinois Administrative Code
IL EPA	Illinois Environmental Protection Agency
mg/kg	Milligrams per kilogram
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OMC	Outboard Marine Corporation
OU	Operable unit
PAHs	Polyaromatic hydrocarbons
PCBs	Polychlorinated biphenyls
ppb	Parts per billion
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
RI	Remedial investigation
ROD	Record of Decision
sq. ft.	Square feet
SVOC	Semi-volatile organic compound
TACO	Tiered Approach to Cleanup Objectives (Illinois Administrative Code)
TCE	Trichloroethene
TSCA	Toxic Substance Control Act
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile organic compound
yds ³	Cubic yards

DECISION SUMMARY

OMC Plant 2 - Operable Unit #4 of the
Outboard Marine Corporation (OMC) Site
Waukegan, Lake County, Illinois

A. Site Location and Description

The OMC Plant 2 site is the fourth of four operable units (OU) of the Outboard Marine Corporation (OMC) National Priorities List (NPL) site. It is located at 90 Sea Horse Drive in Waukegan, Illinois, about 40 miles north of Chicago (see Figures 1 and 2). The OMC site also includes the Waukegan Harbor site (OU #1), the Waukegan Manufactured Gas and Coke Plant ("Waukegan Coke Plant") site (OU #2), and the PCB Containment Cells (OU #3).

The CERCLIS identification number for the OMC site is ILD000802827.

The United States Environmental Protection Agency (U.S. EPA) ("we" or "us") is the lead agency and the Illinois Environmental Protection Agency (Illinois EPA) is the support agency at the OMC site. To date, we have used potentially responsible party (PRP) and Superfund trust fund monies to perform several time critical removal actions and a remedial investigation and feasibility study at the OMC Plant 2 site. We are also preparing to spend Superfund trust fund monies to perform the remedial design for the selected remedial actions herein in mid-2007.

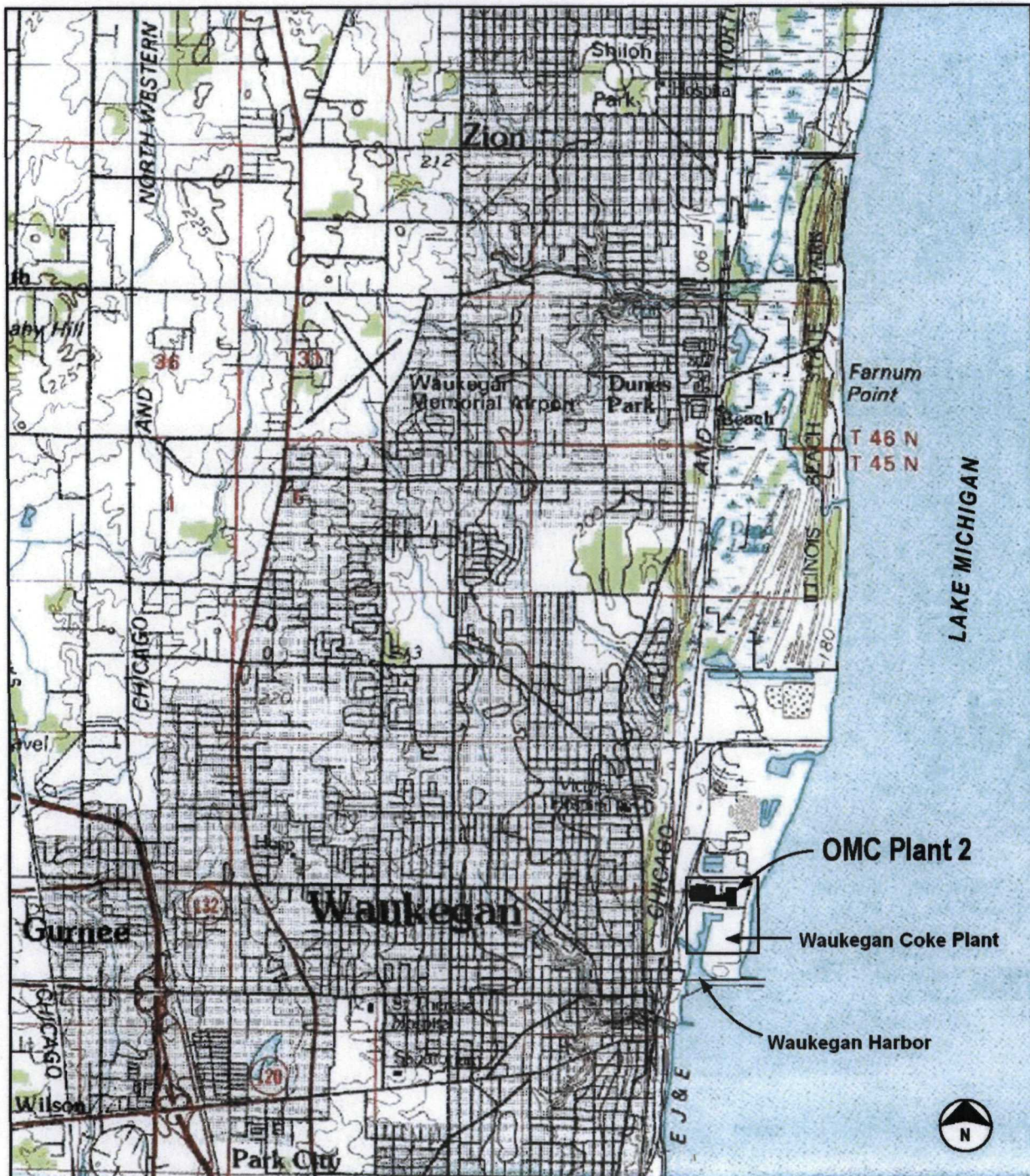
The OMC Plant 2 site is a 60-acre lakefront parcel containing an abandoned 1,060,000 square-foot industrial facility in which OMC made outboard motors from about 1948 until 2000. The facility used polychlorinated biphenyl (PCB)-containing hydraulic and lubricating oils in its production lines beginning in 1961 until 1972 and routinely discharged some of the fluids via sewer lines into Waukegan Harbor, thereby becoming the source of very high level PCB contamination in harbor sediment. OMC also operated several vapor degreasers at the OMC Plant 2 facility to clean newly-made parts with trichloroethylene (TCE). Leaking degreasers and/or TCE storage tanks over the years created a TCE groundwater contaminant plume and a dense, non-aqueous phase liquid (DNAPL) beneath the OMC Plant 2 site.

OMC declared bankruptcy in December 2000 and ceased all manufacturing operations in August 2001. Much of the OMC site is now owned by the city of Waukegan.

B. Site History and Enforcement Activities

1. Site History

Cleanup work at the OMC site began in the early 1980s right after Superfund was passed into law. The State of Illinois had documented PCB contamination in Waukegan Harbor in the mid-1970s and was able to trace it back to the OMC Plant 2

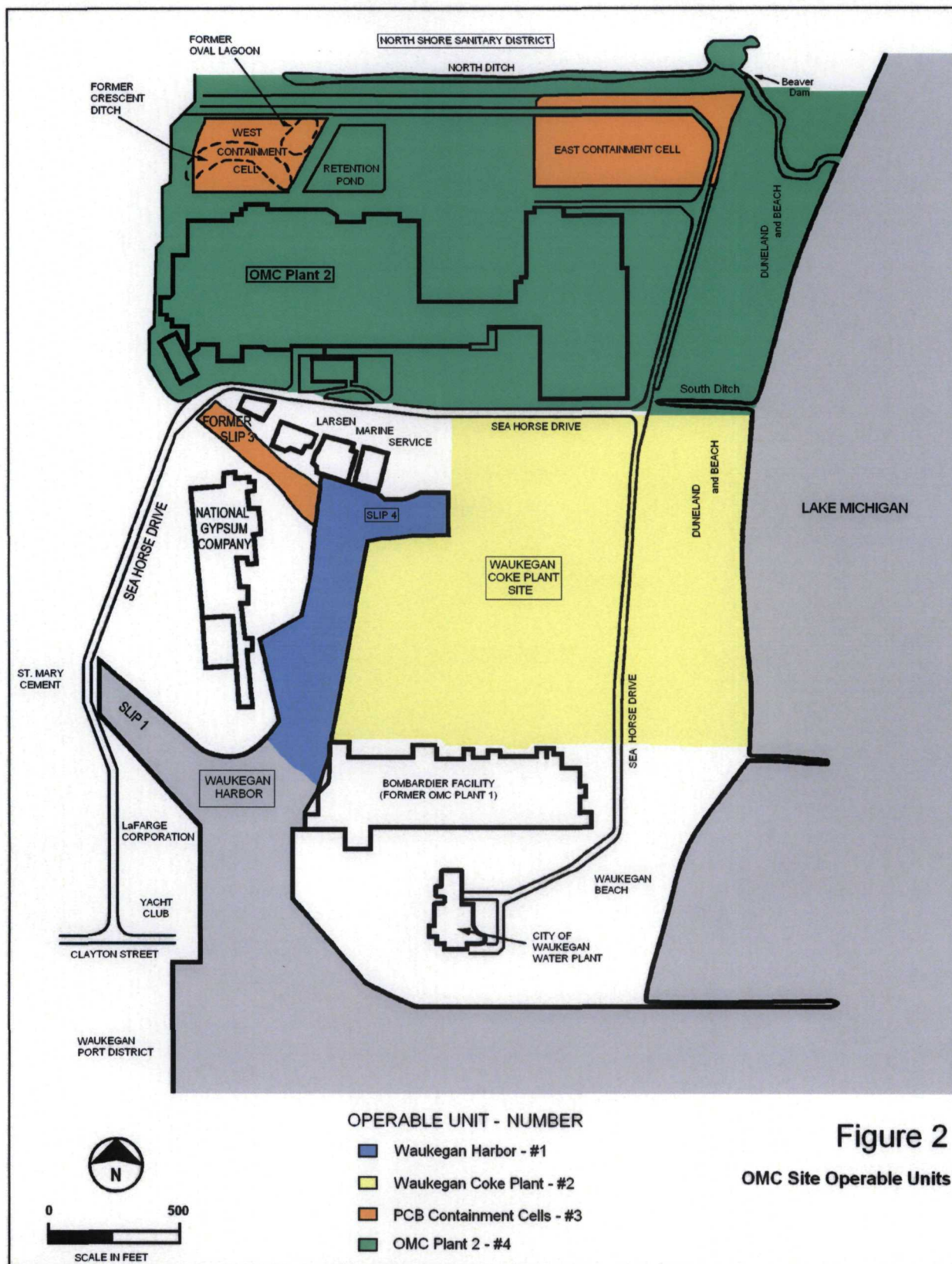


Source: USGS Waukegan Quadrangle Map

0 3,000
Feet

Figure 1

Site Location Map
OMC Plant 2 and Vicinity



facility. The very high levels of PCB contamination in harbor sediment led U.S. EPA to place the OMC site on the interim NPL as the State's top priority site in October 1981. We completed a Hazard Ranking System scoring package and proposed the OMC site for the first NPL on December 30, 1982 (47 Fed. Reg. 58476 (1982)) with final rule listing the site occurring on September 8, 1983 (48 Fed. Reg. 40674 (1983)). The effective date of NPL listing was 30 days following Federal Register publication.

U.S. EPA issued a Record of Decision (ROD) in 1984 to clean up Waukegan Harbor sediment after documenting high PCB contaminant levels in the sediment as well as on the OMC Plant 2 facility grounds. We reached an agreement with OMC in a consent decree in 1988 under which OMC was to perform the cleanup actions selected in the 1984 ROD. After completing the remedial design and U.S. EPA issued a ROD amendment in 1989 to modify the 1984 cleanup approach, OMC cleaned up Waukegan Harbor in 1990-92 by dredging the north harbor area to achieve a 50 milligram per kilogram (mg/kg or "parts per million" (ppm)) PCB cleanup level. OMC converted harbor Boat Slip #3 into a PCB containment cell and placed some of the dredged material into the former slip (see Figure 2). Dredged sediment containing greater than 500 ppm PCBs was thermally treated to remove PCB-laden oils. OMC recovered over 30,000 gallons of PCB-laden oil and shipped them to an off-site facility for incineration.

OMC also excavated PCB-laden soils on the north side of its OMC Plant 2 property to achieve the 50 ppm PCB cleanup level and placed these soils into two newly created PCB containment cells ("West Containment Cell" and "East Containment Cell" – see Figure 2) located on the north side its OMC Plant 2 facility. Treated harbor sediment also may have been placed into these containment cells. OMC operated and maintained the three PCB containment cells until it abandoned Waukegan (including the OMC Plant 2 site) in December 2002 as a result of its bankruptcy proceedings.

OMC constructed Boat Slip #4 in the harbor in 1990 to replace former Boat Slip #3 (which was being used by Larsen Marine Service as its harbor slip) as a part of the 1990-92 harbor cleanup action. Some of the soils excavated from Boat Slip #4 contained creosote and other polycyclic aromatic hydrocarbons (PAHs), leading to the discovery of the adjacent Waukegan Coke Plant site on OMC-owned property (see Figure 2). At this point U.S. EPA broke up the OMC site into operable units for ease of addressing site-wide environmental problems. We designated Waukegan Harbor as OU #1, the Waukegan Coke Plant site as OU #2, and the PCB containment cells as OU #3. We completed a remedial investigation and feasibility study (RI/FS) in February 1999 at the Waukegan Coke Plant site and issued a ROD for the site in September 1999. The Waukegan Coke Plant site is now being cleaned up by several former owner/operator potentially responsible parties (PRPs), but not OMC, under our oversight.

The city of Waukegan purchased the Waukegan Coke Plant property from bankrupt OMC in July 2002. After OMC was permitted to legally abandon the OMC Plant 2

property in December 2002 (after conducting and funding removal actions to address identifiable hazards), the city began proceedings to acquire that property as well, completing the acquisition in December 2005 pursuant to a prospective purchaser agreement consent decree with U.S. EPA and Illinois EPA. After OMC abandoned the OMC Plant 2 property, U.S. EPA and Illinois EPA performed the operation and maintenance tasks for the PCB containment cells until mid-2005, when the city agreed to assume limited responsibility for this work under the above referenced consent decree. We also designated the abandoned OMC Plant 2 site as OU #4.

2. Enforcement

The United States, on behalf of U.S. EPA, filed a complaint in federal court against OMC under the Clean Water Act and other statutes with regards to PCB contamination in Waukegan Harbor sediment in 1978. The complaint was amended in 1982 to seek relief under CERCLA. U.S. EPA negotiated a Waukegan Harbor cleanup consent decree with OMC in 1988. We also issued a special notice of liability to OMC and identified it as one of several PRPs for the Waukegan Coke Plant site in September 2000. Because it had filed for bankruptcy protection in December 2000, OMC was not a signatory to the 2004 cleanup consent decree for the Waukegan Coke Plant site.

OMC is the sole PRP for the OMC Plant 2 site. Because OMC had filed for bankruptcy protection, the United States, on behalf of U.S. EPA, filed a proof of claim in bankruptcy court in 2001 citing the potential cleanup costs of extensive environmental contamination at the OMC Plant 2 site and at other OMC-owned sites in the region. The United States and the OMC bankruptcy estate agreed to settle part of the OMC Plant 2 claim in 2005 and the estate made a payment (less than 10% of the estimated future OMC Plant 2 site cleanup costs) into a Superfund Special Account for use in cleaning up groundwater contamination at the OMC Plant 2 site. The rest of the claim was settled in 2006 when the OMC estate made a small payment into the Superfund.

3. Previous OMC Plant 2 Site Cleanup Actions

U.S. EPA has conducted several time critical removal actions to stabilize and secure the OMC Plant 2 site since the summer of 2002. After the OMC bankruptcy estate petitioned to abandon the site in July 2002, we inspected the facility and then filed an objection to the proposed abandonment. We negotiated a cleanup agreement in an administrative order on consent with the bankruptcy trustee under which the trustee performed several cleanup tasks at the facility under the oversight of our removal program. The trustee decontaminated machinery, disposed of hazardous chemicals being stored in the facility, drained electrical transformers of PCB-oils, and paid a small sum of money into the Superfund to cover future site removal action cleanup work by U.S. EPA. After the agreed-upon work was completed the bankruptcy court approved the abandonment of the OMC Plant 2 site in December 2002.

Immediately after abandonment of the OMC Plant 2 site, U.S. EPA began a time critical removal action to further stabilize and clean up the site. We disposed of additional chemical compounds, removed mercury-containing light switches, secured broken windows and doors to prevent casual access, and attempted the decontamination of PCB-contaminated concrete floors. We also assumed responsibility for the operation and maintenance of the PCB containment cells (OU #3) for a one-year period until December 2003, at which time Illinois EPA assumed responsibility for this work.

In January 2006, U.S. EPA began a removal action in the duneland area near the east containment cell because high levels of PCBs were found in the sands outside the cell. We excavated over 6,000 cubic yards (yds³) of sandy soil containing 10 to 14,000 ppm PCBs and disposed of the material in approved off-site facilities. We also cleaned out several storm sewers leading from the OMC Plant 2 facility to prevent recontamination of the beachfront by residual PCBs discovered in the sewer lines. In January 2007 we undertook a final removal action to dispose of about 25 PCB-containing electrical transformers at the facility to prevent vandals from breaking the transformers open and dispersing PCBs into the environment. We also removed an extensive amount of copper wire and electrical connectors from the plant to reduce the incentive for scavengers to break into the facility and potentially expose themselves to PCB contamination while scavenging for copper or other materials.

U.S. EPA began a remedial investigation (RI) at the OMC Plant 2 site in 2004 to determine the nature and extent of contamination in site groundwater, sediment, and soil and within the OMC Plant 2 building. We issued the *Remedial Investigation Report (for) OMC Plant 2* containing the study results and a human health and ecological risk assessment in April 2006. We began a feasibility study (FS) in 2005 to examine site cleanup alternatives designed to protect human health and the environment and issued the *Feasibility Study Report (for) OMC Plant 2* in December 2006.

C. Community Participation

U.S. EPA, in consultation with Illinois EPA, issued a proposed plan fact sheet for cleanup of the OMC Plant 2 site to the public for review and comment in December 2006. We placed the proposed plan and other site documents into the Administrative Record file and the information repository maintained at the U.S. EPA Records Center (U.S. EPA Region 5, 77 W. Jackson Blvd., Chicago, IL) and at the Waukegan Public Library (128 N. County St., Waukegan, IL). We placed two notices (one in English and the other in Spanish) of the availability of the proposed plan and other documents in the *Waukegan News-Sun*, an area newspaper of wide circulation, in early January 2007. We also printed the proposed plan in Spanish and brought copies to area churches for distribution to parishioners.

U.S. EPA opened a public comment period on the OMC Plant 2 site proposed plan from January 3, 2007 to February 3, 2007. We held a public meeting on January 11, 2007 at

Waukegan City Hall to present the proposed plan and take public comment. We answered questions about the actual or potential health risks posed by contaminants at the site and the remedial alternatives that we evaluated in response to the health risks. Our responses to public comments received during the comment period are included in the Responsiveness Summary section of this Record of Decision.

U.S. EPA has attended many meetings of the Waukegan Community Advisory Group (CAG) over the past several years to keep the CAG updated on the many cleanup actions underway at the OMC site. We attended the CAG meeting on January 18, 2007 to present the OMC Plant 2 proposed plan and answer questions about the proposal. We have also met periodically with city of Waukegan officials to discuss the OMC Plant 2 site, provide updates on cleanup action progress, and to hear the city's plans for redevelopment of the site.

D. Scope and Role of the Response Action

U.S. EPA has identified four media of concern in which chemical contaminants may exceed human health or ecological risk-based cleanup levels at the OMC Plant 2 site. The media are:

- Soil and sediment
- OMC Plant 2 building
- Groundwater
- DNAPL

The December 2006 proposed plan presented our recommended cleanup methods for PCB- and PAH-impacted soil and sediment and PCB-impacted OMC Plant 2 building media and also noted that we had begun pilot-testing potential cleanup methods for the groundwater and DNAPL media. We stated that we planned to release a second proposed plan for cleanup of the OMC Plant 2 site groundwater and DNAPL media in about the summer of 2008 once we had completed the pilot testing. The selected response actions herein are for the PCB- and PAH-impacted soil and sediment and PCB-impacted building media that U.S. EPA will address under our remedial authority under CERCLA and we anticipate them to be the final cleanup actions for the soil and sediment and the building media at the OMC Plant 2 site.

Later, in about 2009, following completion of the groundwater and DNAPL pilot testing and the subsequent selection of cleanup actions for these media, we will implement a cleanup approach to address contaminants of concern (primarily TCE) in the groundwater and DNAPL media. Construction of the cleanup action could occur in 2010; at that point all projected cleanup construction work would be completed for the OMC Plant 2 site.

The OMC Plant 2 site is the fourth of four operable units of the OMC NPL site. Cleanup

construction work is complete at the Waukegan Harbor site (OU #1) and operation and maintenance is underway for the PCB containment cells (OU #3). Soils cleanup work is completed at the Waukegan Coke Plant site (OU #2) and construction of the groundwater remedial action is underway with a projected spring of 2008 completion date. Thus, completion of construction of the groundwater and DNAPL media cleanup remedies at the OMC Plant 2 site (OU #4) would complete the final cleanup remedies for the OMC NPL site.

E. Site Characteristics and Investigation Results

The OMC Plant 2 site is a 60-acre industrial property located on the lakefront in Waukegan, Illinois (see Figure 2). The site is bordered by the North Shore Sanitary District (NSSD) to the north, Lake Michigan to the east, Sea Horse Drive and Waukegan Harbor to the south, and E.J. & E. Railway tracks to the west. The North Ditch drains upland (off site) areas and runs along the NSSD border towards Lake Michigan until it makes a sharp turn to the south very close to the lake. The lakefront side of the site is emergent duneland and beachfront. Lake levels have generally decreased since the 1950s and wave action has deposited a lot of sand from northern sources thereby increasing the amount of emergent duneland in the area. Except for the North Ditch and the South Ditch, there are no existing wetlands on the site.

OMC manufactured outboard motors from about 1948 until 2000 in the 1,060,000 square-foot OMC Plant 2 facility. OMC used PCB-containing hydraulic and lubricating oils in its production line machinery beginning in 1961 until 1972 and allowed the oils to empty into floor drains which led both to an outfall into (former) Boat Slip #3 and into the former Crescent Ditch and Oval Lagoon (see Figure 2, upper left) drainage system which fed into the North Ditch. OMC Plant 2 thus was the source of PCB contamination in Waukegan Harbor sediment (via the Boat Slip #3 outfall) and likely a source of PCB contamination in Lake Michigan (via the Oval Lagoon, Crescent Ditch, and North Ditch drainage system). The Oval Lagoon and Crescent Ditch were covered or filled in as a result of the 1990-1992 harbor cleanup action and no longer exist. The West Containment Cell now occupies the land in their place.

OMC operated several vapor degreasers at the OMC Plant 2 facility to clean newly-made parts with trichloroethylene (TCE). Leaking degreasers and/or TCE storage tanks have created a widespread TCE groundwater contaminant plume and an isolated dense, non-aqueous phase liquid (DNAPL) pool of TCE beneath the site.

Before U.S. EPA began the RI/FS at the OMC Plant 2 site in 2004 we gathered existing written site environmental information and mapped out a sampling strategy based on the following known facts or criteria:

- The 1984 ROD/1989 ROD amendment for the OMC site (OU #1) selected a PCB cleanup level of 50 ppm in Waukegan Harbor sediment and in soil near the

then-active OMC Plant 2 facility; currently, PCB cleanup levels are generally 1 ppm or less for residential soil cleanups.

- OMC had determined that its OMC Plant 2 facility was sitting over extensive groundwater contamination (TCE and its breakdown products) based on sampling work and reports it had privately commissioned in the 1990s.
- OMC had numerous RCRA-permitted chemical storage units on site, some of which it had removed or closed prior to its declaration of bankruptcy in 2000.
- The groundwater aquifer beneath the site is a 20-30 foot layer of sand deposited on a thick layer of "lake clay" or "hardpan."
- The OMC Plant 2 building was likely impacted by PCB contamination inside based on PCB-usage records and the general 'filthy' appearance of the soon-to-be abandoned facility in mid-2002.
- OMC did not use asbestos-containing material in its manufacturing processes.

Based on the written information we gathered at the OMC Plant 2 site, the known or suspected sources of site contaminants included:

- Drainage lines containing PCB-laden hydraulic and cutting oils
- Vapor degreasers using TCE
- Other storage units previously containing paints or fuels

Thus, our sampling plan for the OMC Plant 2 site included the following tasks:

- Take wipe samples of interior building surfaces for PCB analysis
- Take surface and subsurface soil samples for PCB, volatile organic compound (VOC), semi-volatile organic compound (SVOC), and metals analyses
- Obtain core samples of interior concrete floors for PCB analysis
- Use direct-push technology to determine the nature and extent of groundwater contamination prior to taking samples for PCB, VOC, SVOC, and metals analyses
- Take samples of DNAPLs (if found) for PCB, SVOC, and VOC analyses

Our sampling plan was crafted to yield data that would help us determine actual or potential risks to human health and the environment based on current and projected uses for the site. Currently, human receptors use the beachfront and duneland areas on a recreational basis and trespassers or scavengers periodically access the abandoned building. Ecological receptors also frequent or live in the beachfront and duneland areas. Future residential receptors will be using the site if the city's redevelopment plans come to fruition; otherwise, the building could be re-used

industrially, exposing future workers to existing site contaminants. Our RI sampling results both confirmed OMC's previous sampling results and showed more widespread areas of contaminants than previously known. As a result, we identified four media of concern at the site, discussed in further detail below.

Soil and Sediment Media

OMC had excavated OMC Plant 2 property soils as part of the 1990-2 Waukegan Harbor cleanup action and the selected cleanup level for PCBs in the soil was 50 ppm. Thus, while our RI sampling results showed pervasive, low levels (between 1 and 50 ppm) of PCBs and PAHs in site soil and in sediment in the North Ditch, we only found limited areas with high levels (greater than 50 ppm) of PCBs or PAHs. PCB results ranged from not-detected (ND) to 790 ppm in soil and from ND to 150 ppm in sediment. PAHs, including benzo(a)pyrene, benzo(a)anthracene, and similar compounds, ranged from ND to 51 ppm. Figure 3 shows soil areas impacted by PCBs above a preliminary cleanup goal of 1 ppm and PAHs above a preliminary cleanup goal of 2 ppm at the OMC Plant 2 site and the depths at which the soil is impacted. Although not shown in the figure, much of the North Ditch contains a thin layer of sediment impacted by PCBs. We calculate that about 40,000 yds³ of soil and sediment exceed the preliminary cleanup goals for PCBs and PAHs; of that amount, about 1500 yds³ exceed 50 ppm PCBs.

PCBs and PAHs are persistent in the environment (not easily broken down by natural forces) and are not very soluble, thus we do not predict that these contaminants will migrate from the site in appreciable levels over time. A minor amount of contaminants may erode from the site into Lake Michigan via flow from the North Ditch or wind-blown dune sands; however, we expect that present contaminant levels will remain fairly consistent over time. Unless addressed, this could lead to long term human and ecological (birds, small mammals) exposure to these contaminants for those who use the beachfront and future exposure to residents on the OMC Plant 2 site should it be redeveloped in accordance with the city's lakefront redevelopment plans.

OMC Plant 2 Building (Interior) Media

Much of the 1-million square foot OMC Plant 2 building is contaminated with PCBs on interior surfaces. Concrete floors, abandoned machinery, and porous and nonporous wall and ceiling surfaces showed levels of PCBs from ND to 750 µg/100 cm² (the Toxic Substance Control Act (TSCA) screening criterion is 10 µg/100 cm²). Figure 4 shows areas of the building identified as being above the TSCA screening level whether in concrete or on other interior surfaces. About 620,000 square feet (sq. ft.) of building space is impacted by PCBs above the TSCA screening level.

Figure 4 also shows the uncontaminated areas of the OMC Plant 2 facility. U.S. EPA shared our preliminary RI findings with the city of Waukegan in early 2006 and the city

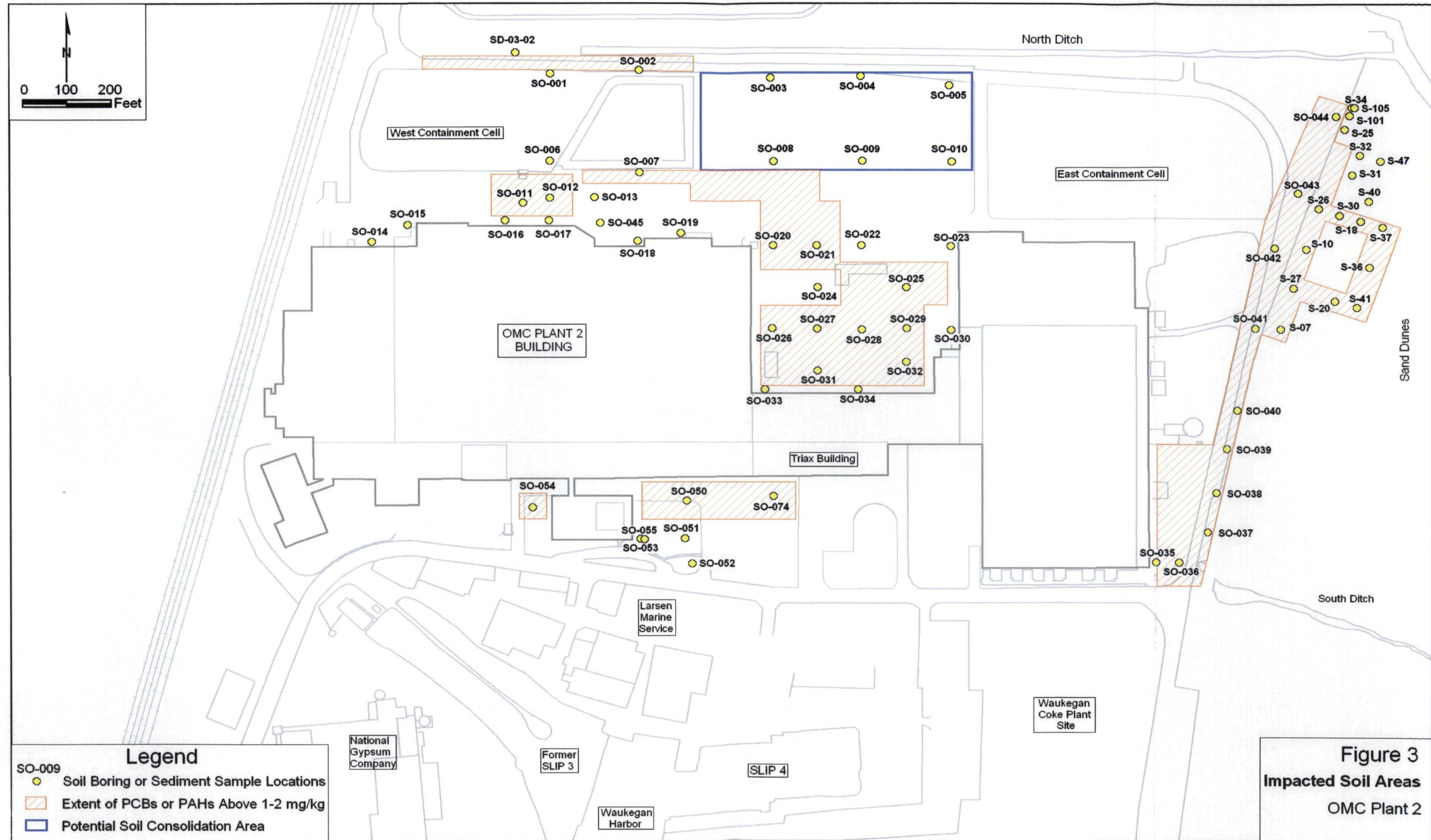
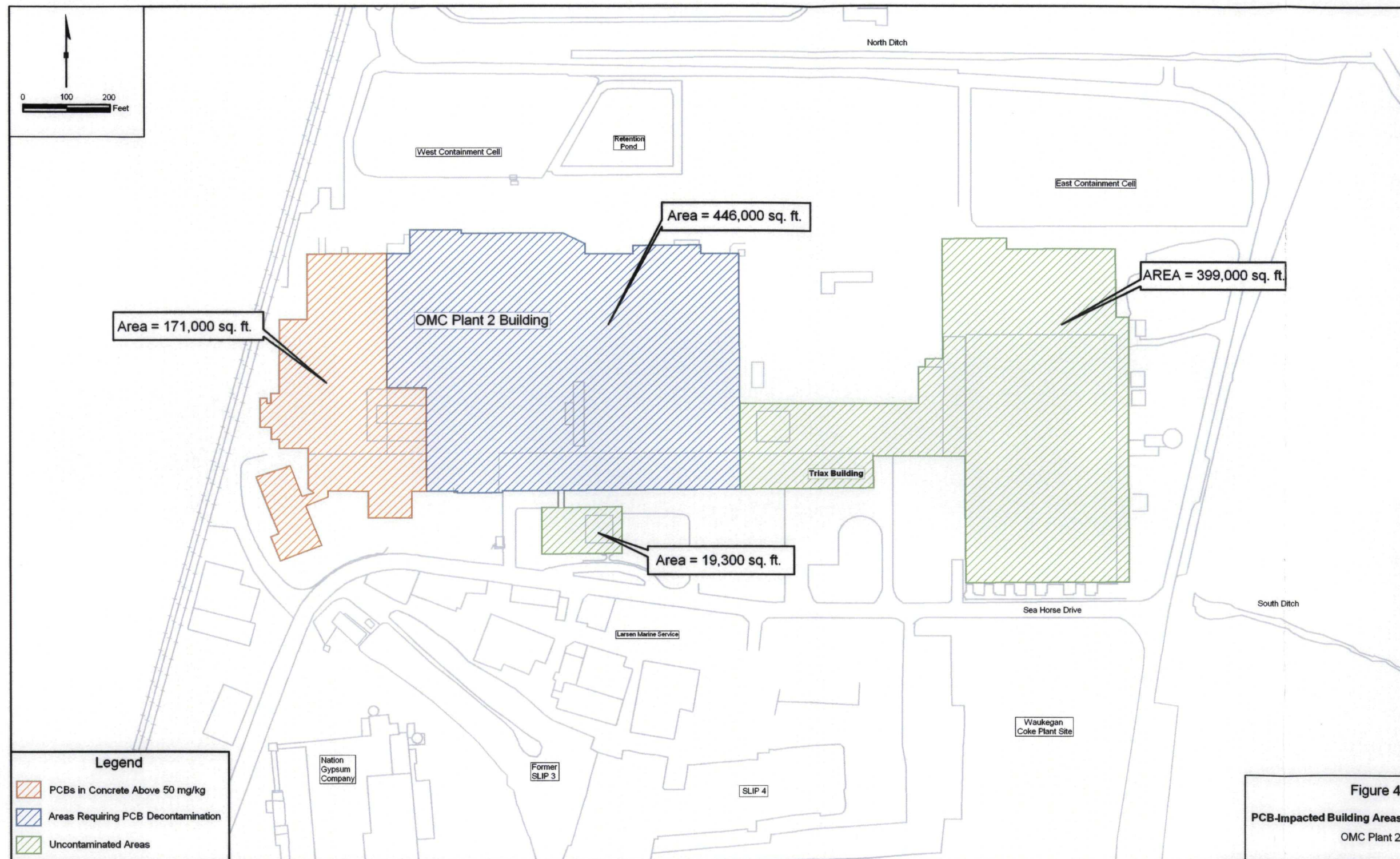


Figure 3
Impacted Soil Areas
OMC Plant 2



quickly responded by hiring a contractor to demolish the nearly 400,000 sq. ft. of uncontaminated structures down to the concrete slabs beginning in August 2006. Metals were reclaimed for recycling and the rest of the debris was hauled off site and disposed of in a licensed municipal waste landfill. The city, by agreement with U.S. EPA, moved PCB-containing electrical transformers from this area into a storage room in the contaminated building and then U.S. EPA disposed of these and almost all other PCB-containing transformers off site in a licensed facility in January 2007. One large PCB-containing transformer remains on the roof of the contaminated building and will need to be addressed during the final building cleanup action.

Because the OMC Plant 2 facility is not in use, only basic maintenance activities are taking place to maintain the building as a viable structure. Thus, as the building falls into further disrepair it is predicted that the PCBs therein will eventually migrate into the environment. We have also documented trespassing incidents by vandals and scavengers, no doubt exposing these people to PCBs.

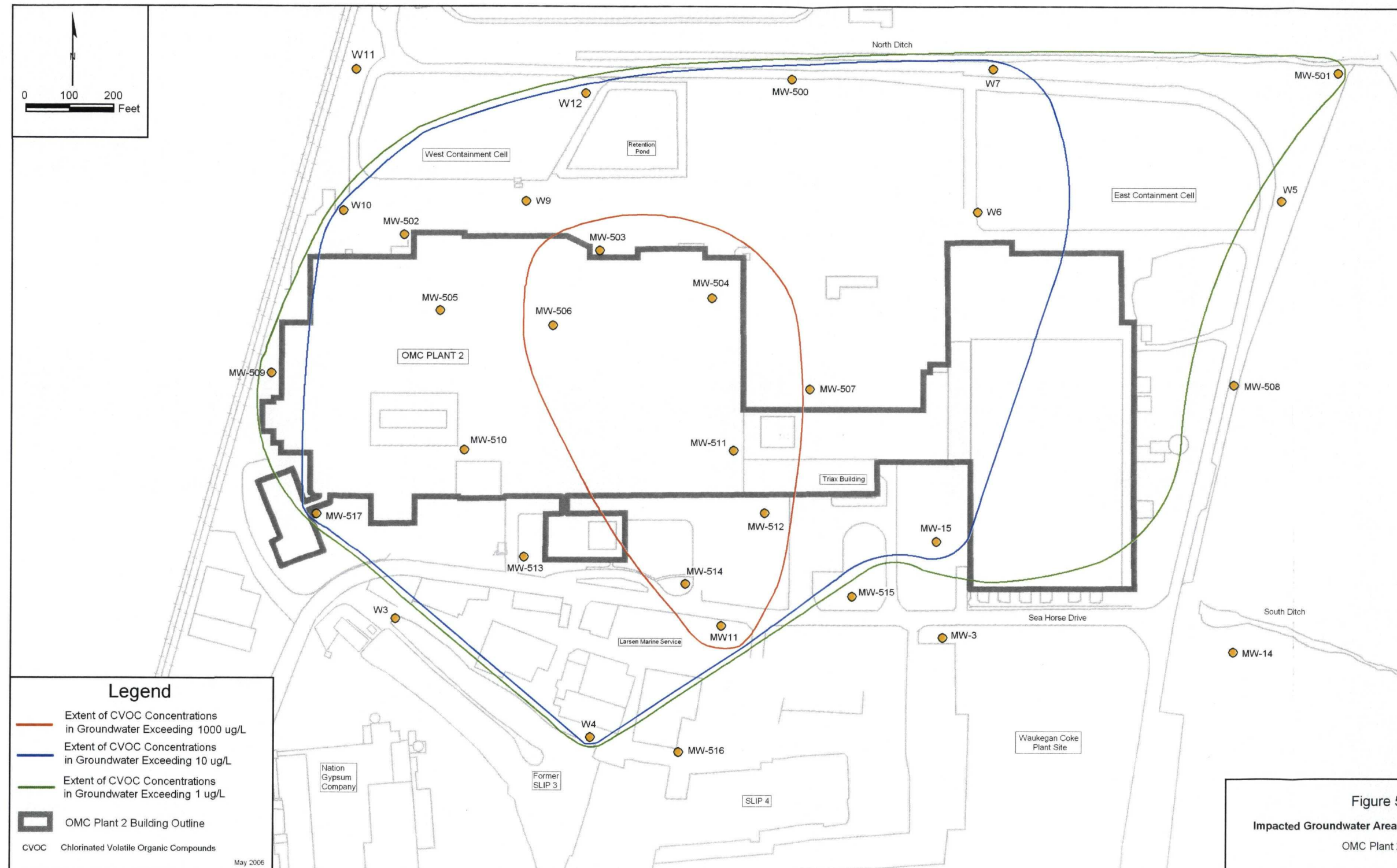
Note: the "Triax Building" shown on Figure 4 was not demolished by the city as it will be preserved to house the water treatment facility to be built in 2007 for the separate Waukegan Coke Plant (OU #2) groundwater cleanup action. The water treatment facility will be run by the PRPs for the adjacent Waukegan Coke Plant site (OU #2) for a 5-8 year period and then the city may either remove the Triax Building or make it available to others for reuse.

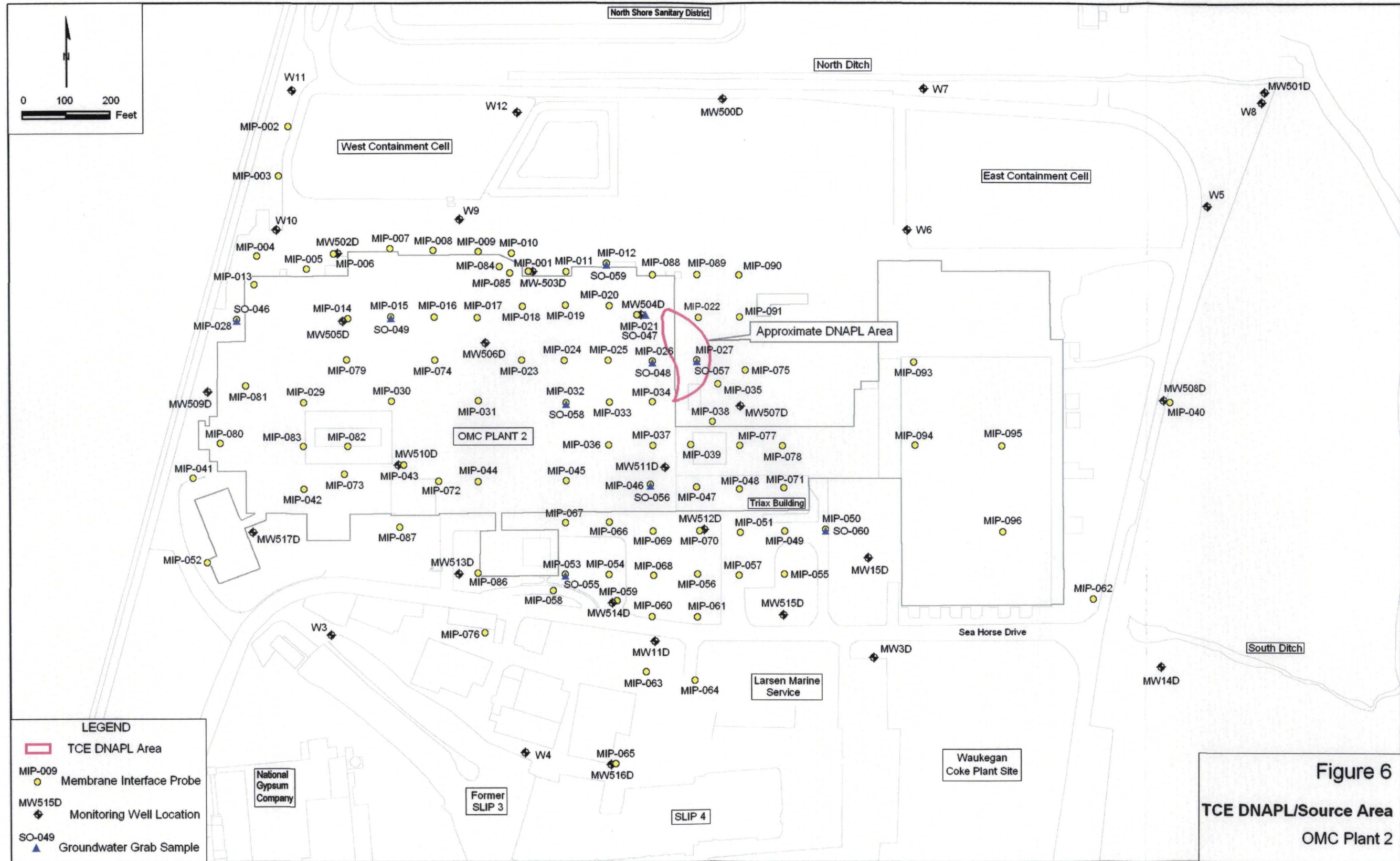
Groundwater and DNAPL Media

U.S. EPA decided to begin a pilot study of groundwater and DNAPL cleanup methods in the fall of 2006 to augment the RI/FS data we collected before we would propose and select a remedy for these media. Briefly, groundwater sampling detailed a large contaminant plume beneath the OMC Plant 2 site primarily containing TCE and its breakdown products (1,2-dichloroethylene and vinyl chloride). Some areas had groundwater TCE levels exceeding 1000 micrograms per liter ($\mu\text{g/L}$ or "parts per billion" (ppb)) and vinyl chloride up to 800 ppb. In comparison, target cleanup levels for these compounds at other sites approach 1-5 ppb or less. Figure 5 shows the general extent of groundwater VOC contaminants at the site.

A DNAPL of TCE lies on the lake clay surface about 30 feet below ground and is a continual source of TCE contamination in the groundwater. Figure 6 shows the approximate location of the TCE DNAPL area.

Generally, groundwater flow is to the east on the northern portion of the site and towards the harbor on the southern portion of the site. There are no potable wells on the site so no one is drinking contaminated water. As seen on Figure 5, VOCs appear not to be discharging into Lake Michigan as yet based on current sampling data but perhaps low levels of VOCs could be entering the harbor. U.S. EPA sampled the





indoor air in one of the Larsen Marine Service (Larsen) buildings in the winter of 2005 to check if there was an indoor air intrusion problem at Larsen, but we did not see any of the OMC Plant 2 site VOCs in our results.

F. Current and Potential Future Land and Resource Uses

The OMC Plant 2 site is currently zoned commercial-industrial and other commercial-industrial properties surround the site. However, the adjacent Waukegan Coke Plant site (OU #2) has already been rezoned by the city to high-density residential in anticipation of redevelopment of this site in the near future. With its location next to Lake Michigan and Waukegan Harbor, U.S. EPA expects that the OMC Plant 2 site could also be rezoned to high-density residential consistent with the city's lakefront redevelopment plans. The city has published its master plan for redevelopment (see Figure 7) on its website and officials have recently stated that in another 15-20 years perhaps "8000-10,000 people" will be living on the lakefront where no residents are living now. Alternatively, the existing OMC Plant 2 building could be re-used industrially should the city's current plans for redevelopment be significantly delayed or revised.

Groundwater is not used for potable purposes in the OMC site area (as a whole) because the city obtains its municipal water supply from Lake Michigan (see Figure 2 for location of the city's water plant). Given the shallow nature of the aquifer we do not anticipate that groundwater would be used as a source of drinking water in the future. If the site groundwater was free of OMC-derived VOC contaminants, however, it would be potentially usable and therefore we would classify it as a Class IIB aquifer. However, there could be indoor air vapor intrusion problems, potential outdoor air quality issues (both due to future development over the contaminant plume), and/or impacts to water quality in the lake or harbor if the contaminant plume is not addressed.

G. Summary of Site Risks

U.S. EPA evaluated the levels of contaminants found in site soil and sediment and inside the OMC Plant 2 building to determine the actual or potential risks to human health and the environment. (We also evaluated risks for groundwater, but we are not selecting a groundwater cleanup method in this ROD so actual or potential groundwater risks will not be discussed herein.) The steps we took to evaluate actual or potential health risks first included the identification of "contaminants of concern" (COCs) - those compounds that exceeded health-based levels at the site - using screening level or preliminary remediation goals published by the State of Illinois and/or U.S. EPA. We also evaluated chemical fate and transport factors to determine whether the COCs were potential short-, medium-, or long-term risks at the site. We then examined potential pathways of concern to human health and the environment under current and future site-use scenarios in an exposure assessment and we applied the results of the above steps to quantify actual or potential risks to human health and the environment by combining exposure level assumptions with estimated carcinogenic risk or toxicity

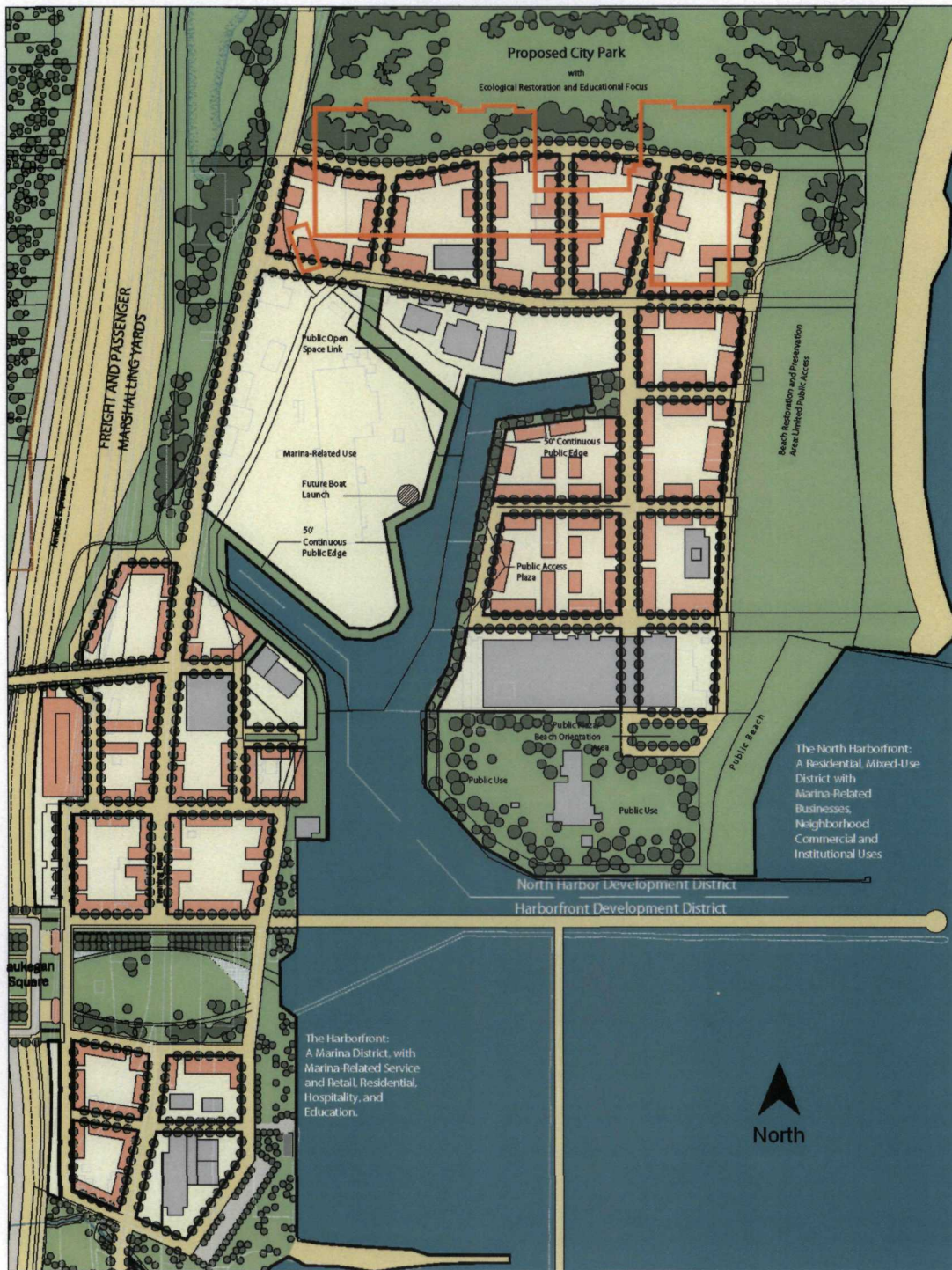


Figure 7
Waukegan's Master Plan for
Harborfront and North Harbor
Development Districts

Source: Waukegan Lakefront-Downtown Master Plan/Urban Design Plan
(Skidmore, Owings & Merrill LLP, June 23, 2003)

OMC Plant 2 and Vicinity

factors for the COCs. The human health and ecological risk assessment work is fully presented in the RI Report, which is a part of the Administrative Record for the site.

Contaminants of Concern

U.S. EPA identified PCBs and PAHs (each as a group) as COCs in OMC Plant 2 site soil and sediment and PCBs as a COC inside the OMC Plant 2 building (see Table 1).

Table 1: Contaminants of concern at the OMC Plant 2 site.

Media	Contaminant of Concern	Average Concentration	Highest Concentration	Screening Level
Soil	PCBs	18 ppm	790 ppm	1 ppm
Sediment	PCBs	1-2 ppm	150 ppm	1 ppm
Soil	PAHs	1-6 ppm	51 ppm	2 ppm
Building (interior)	PCBs	48-103 µg/100 cm ² (surface wipe sample)	750 µg/100 cm ²	10 µg/100 cm ²
Building (concrete)	PCBs	Location dependent (see Figure 4)	1400 ppm	1 ppm

Notes: "Guidance on Remedial Actions for Superfund Sites with PCB Contamination (August 1990)" recommends 1 ppm PCB preliminary remediation goal in residential soil; the PAH screening level is derived from general background values for urban areas in Illinois published by the State; interior building surface screening level derived from TSCA.

We also found high levels of TCE and its breakdown products (such as vinyl chloride) in some soil samples taken from below the water table; however, the location of these contaminants is associated with the groundwater contaminant plume and is under the building's concrete slab in the western area. Because it was difficult and resource-intensive to drill through the concrete slab in order to more fully sample the soil below, we plan to evaluate and propose a plan to clean up these potential sources of groundwater contamination after the slab is removed during this cleanup action and upon conclusion of our groundwater and DNAPL pilot studies in the spring of 2008.

Fate and Transport

PCBs and PAHs tend to adhere to soil and sediment particles and the mobility of these compounds is low. Bioaccumulation is moderately likely to occur in receptors and they do not readily biodegrade. Thus, these COCs, if not addressed, will persist for years to come and be readily available for people and animals to become exposed to them.

Exposure Assessment

U.S. EPA examined potential pathways of concern to human health and the

environment under current and future site-use scenarios. Major pathways of concern for the actual or potential exposure of nearby human populations, animals, or the food chain to COCs include the following:

Current Pathways

Dermal contact with COCs could occur if people or animals were to recreationally use areas where surface soil or sediment is contaminated, such as in the duneland area next to Lake Michigan or in the North Ditch and South Ditch. Digging in these areas could expose a person or animal to contaminants by dermal contact if one were to touch impacted soil or sediment. Digging in these areas could also suspend dust particles into the air, causing them to be an inhalation or ingestion hazard. Dermal contact to COCs could also occur inside the building if trespassers or scavengers were to break in and walk over contaminated areas or handle contaminated materials.

Future Pathways

Future exposure pathways would be the same as current pathways. However, if the site is redeveloped there could be a greater amount of exposure to COCs in soils and sediment since people would be living at the site (residential use) instead of using it on a periodic basis (recreational use). If the building was retained for industrial use in the future, workers could be exposed to contamination if the COCs were not addressed.

Toxicity Assessment

U.S. EPA evaluated the relationship between the magnitudes of actual or potential exposure to COCs at the site with corresponding adverse health effects. An estimate of the increased likelihood and severity of the adverse effects was calculated and used in the assessment of risk for the COCs at the site.

Generally, adverse health effects are divided into two categories – cancer causing (carcinogenic) and non-cancer causing (noncarcinogenic). Of the COCs at the site, PCBs and some PAHs are carcinogenic and other PAHs are noncarcinogenic (although PCBs may have noncarcinogenic effects as well). Risk calculations were performed separately for carcinogens and noncarcinogens because the adverse health effects are different (e.g. cancer-causing versus causing liver failure).

COCs were assigned toxicity values in accordance with U.S. EPA's Integrated Risk Information System (IRIS). Next, noncarcinogenic effects were evaluated using reference doses (RfD) developed by the Agency. Reference doses were developed on the assumption that certain levels of contaminants may not pose ill effects to the liver or kidney, for example, due to daily exposure at threshold levels over a lifetime of exposure. Combined with the results of the exposure assessment, we were able to calculate the hazard index (HI) quotients for each COC. A HI quotient of 1 or more

indicates that there is likely an adverse impact to target organs due to exposure to a chemical at the concentration found at a site. A HI quotient of less than 1 indicates no likely adverse health effects due to exposure to a chemical at site concentrations.

Similarly, reference doses for carcinogens are developed based on published cancer slope factors extrapolated from animal testing or other means. Using reasonable maximum exposure rates based on the results of the exposure assessment, we calculated an excess lifetime cancer risk (ELCR) value for each COC. An ELCR is an estimate of one's chances of contracting cancer due to lifelong exposure to a chemical at site concentrations and is expressed as an exponential value (e.g. 1×10^{-2} is 1 in 100.)

Human Health Risks

U.S. EPA generally cleans up NPL sites to reduce contaminant levels so that the estimated ELCRs posed by residual carcinogenic contaminants fall within a risk range of 1×10^{-4} to 1×10^{-6} (1 in 10,000 to 1 in 1,000,000) and/or the estimated HI quotients for residual noncarcinogenic compounds fall to less than 1. We may use the term "unacceptable risk" when referring to contaminants at concentrations above levels that yield estimated an ELCR greater than 1×10^{-4} or a HI quotient greater than 1 after a risk assessment is performed.

The current recreational-use scenario in the beach area at the OMC Plant 2 site results in PCB exposures in soil and sediment via dermal contact and ingestion. A future residential-use scenario results in PCB and PAH exposures in soil and sediment via dermal contact and ingestion. Potential inhalation risks were not significant. As shown in Table 2, below, each of these scenarios yielded unacceptable risks to human health.

Inside the OMC Plant 2 building the current trespasser scenario results in PCB exposures via dermal contact to contaminated surfaces. A future factory worker scenario also results in dermal contact PCB exposure. Although the current trespasser scenario does not result in unacceptable risk, provided that no further cleanup inside the building occurs the future worker risk does exceed acceptable risk levels.

Ecological Risk Characterization

U.S. EPA also examined the potential risks to ecological receptors based upon the COCs found in site soil and sediments. We assumed that terrestrial and avian species at the site could be exposed to contaminants through external direct contact, ingestion of impacted soil and food, and inhalation of impacted dust. Using recommended dose limits of the various compounds for terrestrial and avian biota, we concluded that there is a potential for adverse effects caused by PCBs in the soil and sediment.

PCBs in soil and sediment may create adverse health effects in shrews, voles, red fox,

robins, mourning dove, and red-tailed hawks according to our ecological assessment. The areas of impact for soil mostly occur on the east side (duneland) of the site and for sediment in the North Ditch and South Ditch. The calculated HI quotients range from 2 (voles) to 102 (shrews).

Table 2: ELCR values for exposure scenarios and pathways of concern

Contaminant of Concern	Media	Actual or Potential Use	Exposure Pathway	ELCR	HI Quotient
PCBs	Soil and sediment	Current Recreational	Dermal contact and ingestion	2×10^{-4}	Less than 1
PCBs and PAHs	Soil and sediment	Future Residential	Dermal contact and ingestion	4×10^{-4}	Less than 1
PCBs	Building	Current Trespasser	Dermal contact	2×10^{-5}	Less than 1
PCBs	Building	Future Worker	Dermal contact	2×10^{-3}	Less than 1

Note: A value in **bold** indicates that the calculated risk is outside the target risk range (i.e. it presents "unacceptable risk").

Basis for Taking Action

U.S. EPA has determined that PCBs and PAHs in OMC Plant 2 site soil and sediment present unacceptable risks to current and future human and ecological receptors based on our human health and ecological risk assessment results. We have also determined that PCB levels inside the OMC Plant 2 building would present unacceptable risks to future human receptors if left unaddressed. Thus, the response actions selected in this ROD are necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances, pollutants, or contaminants from the site which may present an imminent or substantial endangerment to public health or welfare.

H. Remedial Action Objective

U.S. EPA's remedial action objective for the both the OMC Plant 2 site soil and sediment media and the building media is to actively reduce the concentrations of COCs to levels that would allow the property (except for the PCB containment cells) to be re-used for residential and recreational purposes without restrictions and to meet protective levels for ecological receptors. This means that once we complete any cleanup actions, people who use the OMC Plant 2 site under the residential and recreational exposure assumptions could still be exposed to residual PCB and PAH

contaminant levels in soil and sediment but that would not cause their estimated ELCRs to exceed the estimated risk range of 1×10^{-4} to 1×10^{-6} . (The calculated HI quotients are below 1 already.) In addition, ecological receptors would not be exposed to potentially harmful levels of PCBs at the site. The 1 ppm PCB cleanup level in soil and sediment would cause all calculated HI quotients to fall below 1 for ecological receptors. We would also meet applicable or relevant and appropriate requirements (ARARs) for environmental cleanup actions at the site.

This remedial action objective is consistent with the reasonably anticipated future land use for the OMC Plant 2 site. The city of Waukegan has stated its desire to redevelop its lakefront into a high-density residential area over the next several years (compare Figure 2 to Figure 7). The beachfront area would be retained for recreational use. Addressing the PCBs and PAHs in the soil and sediment and building media would remove the compounds from the environment or sever the exposure pathways so that human and ecological receptors would not be exposed to contaminant levels that create unacceptable risks.

To achieve the remedial action objective, U.S. EPA would need to reduce COC levels in the soil and sediment and building media to the target cleanup levels presented in Table 3, below.

Table 3: Site cleanup levels for COCs in OMC Plant 2 site media

Compound	Media	Cleanup Level (Source)
PCBs	Soil and sediment	1 ppm (Superfund PCB cleanup guidance)
PAHs	Soil	2 ppm (State published background levels)
PCBs	Building and debris	1 ppm (Superfund PCB cleanup guidance)

Note: U.S. EPA would likely still need to address groundwater and DNAPL media contaminants beneath the OMC Plant 2 site as a way to alleviate potential indoor air vapor intrusion risks before site re-use occurs. We plan to be able achieve this objective, as discussed previously, after completing the groundwater and DNAPL pilot testing, evaluating suitable cleanup remedies, and issuing a proposed plan for cleanup of these media in about the summer of 2008.

I. Description of Alternatives

U.S. EPA evaluated various site cleanup alternatives in the FS Report in order to reduce or eliminate the actual or potential risks to human health or the environment. We evaluated clean-up methods for each media (building, soil, groundwater, DNAPL) of the OMC Plant 2 site by comparing them to the Nine Criteria (see Section J, below). However, we are only making a cleanup decision for the building and soil portions of the site in this ROD as we are still studying possible cleanup methods for the groundwater and DNAPL areas.

One method to achieve the remedial objective could have solely been the placement of institutional controls (a catch-all term for deed notices, groundwater-use prohibitions, and the like) on the affected property to help prevent exposure or future property uses inconsistent with protective uses. However, institutional controls alone would not likely protect ecological receptors; thus, we determined that this approach would not be protective of the environment and we screened out this alternative in the FS Report.

We also screened out treatment alternatives for PCBs and PAHs in soil and sediment and building debris. Typically treatment alternatives for PCBs could include incineration or low temperature thermal desorption. However, these alternatives are expensive and are generally more cost effective to use on more highly contaminated (principal threat) material than is generally found at the site. We screened out the placement of certain engineered controls such as landfill covers or caps over the soil and sediment media (without digging up the material) as these barriers would likely be imperiled by the city's redevelopment plans for the site.

Presented below are brief descriptions of the remedial alternatives that we fully evaluated during the FS. Because the alternatives are very similar and only differ in terms of placement or disposal of wastes, a more thorough description of the selected remedy is presented in Section L, below, rather than in this section of the ROD.

Soil and Sediment

U.S. EPA examined the following remedial action alternatives for the PCB- and PAH-contaminated soil and sediment outside the OMC Plant 2 building (each labeled "S" for "soil and sediment"):

Alternative 1S: No Action

Alternative 2S: Excavation of Soil and Sediment with Off-site Disposal

Alternative 3S: Excavation of Soil and Sediment with Off-site Disposal and On-site Consolidation

Alternative 4S: Excavation of Soil and Sediment with Off-site Disposal and On-site Consolidation, With Co-Disposal of Harbor Sediment

Alternative 1S: No Action

U.S. EPA policy requires that the No Action alternative be presented for comparison purposes only. Under this alternative, we would take no clean-up action to remove or contain the contaminated soil and sediment at the OMC Plant 2 site. This alternative is easily implemented and costs nothing. However, potentially harmful levels of COCs would remain on site and we would recommend no future use of the affected areas because of the potential human health risks that the PCBs and PAHs may pose. Ecological risks would remain as well.

Alternative 2S: Excavation of Soil and Sediment with Off-site Disposal

Under Alternative 2S we would excavate all on-site soil and sediment in the North Ditch and South Ditch exceeding 1 ppm PCBs and/or 2 ppm PAHs and dispose of the material off site. Material exceeding 50 ppm PCBs would be disposed of in a licensed Toxic Substance Control Act ("TSCA")-compliant facility. Material below 50 ppm PCBs could be disposed of in a municipal landfill. After excavation was completed we would backfill the areas with clean soil and revegetate them.

After we completed the design stage and when funding was available, construction activity for Alternative 2S could be completed in about six months. We could implement this cleanup alternative at the same time as the selected building cleanup alternative (below). The estimated total cost to implement Alternative 2S is about \$7.3 million.

The proposed cleanup work would enable the excavated soil and sediment areas of the site to be ready for re-use for residential, recreational, and/or commercial/industrial purposes. Further work would likely be necessary to clean up the groundwater and DNAPL areas of the site, but we would no longer need to address or monitor the cleaned up surface areas. Ecological risks would be greatly reduced as well.

Alternative 3S: Excavation of Soil and Sediment with Off-site Disposal and On-site Consolidation

Under Alternative 3S we would excavate all on-site soil and sediment in the North Ditch and South Ditch exceeding 1 ppm PCBs and/or 2 ppm PAHs and dispose of soil or sediment containing 50 ppm PCBs or higher off site at a licensed TSCA-compliant facility. Soil or sediment containing less than 50 ppm PCBs would be consolidated in an area located between the east and west containment cells on the north side of the property (see Figure 3). Excavated material would be placed on the ground without a bottom liner and then covered with 12 inches of clean soil and seeded. We would also backfill the completed excavation areas with clean soil and revegetate them.

After we completed the design stage and when funding was available, construction activity for Alternative 3S could be completed in about seven months. We could implement this cleanup alternative at the same time as the selected building cleanup alternative. The estimated total cost to implement Alternative 3S is \$5.4 million.

The proposed cleanup work would enable the excavated soil and sediment areas of the site to be ready for re-use for residential and/or commercial/industrial purposes. Further work would likely be necessary to clean up the groundwater and DNAPL areas of the site, but we would no longer need to address or monitor the cleaned up area. Ecological risks would be greatly reduced as well. However, U.S. EPA and then the state, or the city of Waukegan or any subsequent purchasers of the site would need to monitor and maintain the on-site consolidation area well into the future.

Alternative 4S: Excavation of Soil and Sediment with Off-site Disposal and On-site Consolidation, With Co-Disposal of Harbor Sediment

Under Alternative 4S we would excavate all on-site soil and sediment in the North Ditch and South Ditch exceeding 1 ppm PCBs and/or 2 ppm PAHs and dispose of the material similarly to Alternative 3S, above. Soil or sediment containing 50 ppm PCBs or higher would be disposed of off site at a licensed TSCA-compliant facility. Soil or sediment containing less than 50 ppm PCBs would be consolidated in an area between the PCB containment cells (see Figure 3). We would design and build the consolidation area without a bottom liner system and construct it to allow for the placement of Waukegan Harbor sediment¹ should a harbor cleanup plan be enacted. After all materials were placed into the consolidation area it would be covered with 12 inches of clean soil and seeded. We would also backfill the completed excavation areas with clean soil and revegetate them.

After we completed the design stage and when funding was available, construction activity for Alternative 4S could be completed in about seven months. We would implement this cleanup alternative at the same time as the selected building cleanup alternative. The estimated total cost to implement Alternative 4S is \$5.9 million.

The proposed cleanup work would enable the excavated soil and sediment areas of the site to be ready for re-use for residential and/or commercial/industrial purposes. Further work would likely be necessary to clean up the groundwater and DNAPL areas of the site, but we would no longer need to address or monitor the cleaned up area. Ecological risks would be greatly reduced as well. However, U.S. EPA and then the state or the city of Waukegan or any subsequent purchasers of the site would need to monitor and maintain the on-site consolidation area well into the future.

OMC Plant 2 Building

We evaluated the following alternatives for the PCB-contaminated areas of the OMC Plant 2 building (each labeled “B” for “building”):

Alternative 1B: No Action

Alternative 2B: Building Demolition with Off-site Disposal

Alternative 3B: Building Demolition with Off-site Disposal and On-site Consolidation

Alternative 4B: Building Demolition with Off-site Disposal and On-site Consolidation, With Co-Disposal of Harbor Sediment

¹ Waukegan Harbor has been named a Great Lakes Area of Concern partly due to residual PCB contamination in the sediment in the harbor. At the time this ROD was written, U.S. EPA’s Great Lakes National Program Office was nearing the end of a multi-year evaluation of a possible cleanup action for the harbor under the Great Lakes Legacy Act. The term “harbor cleanup plan” refers to this potential cleanup work.

Alternative 1B: No Action

U.S. EPA policy requires that the No Action alternative be presented for comparison purposes only. Under this alternative, we would take no action to remove or contain the PCBs in the OMC Plant 2 building. This alternative is easily implemented and costs nothing. However, the potentially harmful levels of PCBs would remain inside the building and we would recommend no further use of the affected building areas because of the potential human health risks that the PCBs may pose to future workers.

Alternative 2B: Building Demolition with Off-site Disposal

Under Alternative 2B we would demolish the PCB-contaminated portions of the OMC Plant 2 building, including impacted concrete floors. We would try to decontaminate as much of the structure as possible so that we may recycle steel, copper, concrete, and usable equipment. All materials that cannot be decontaminated to PCB levels below 1 ppm (or a surface concentration of $10 \mu\text{g}/100 \text{ cm}^2$) will be sent off site for disposal in approved facilities. Material exceeding 50 ppm PCBs (or a surface concentration of $100 \mu\text{g}/100 \text{ cm}^2$) would be disposed of in a licensed TSCA-compliant facility. Material below 50 ppm PCBs (or a surface concentration of $100 \mu\text{g}/100 \text{ cm}^2$) could be disposed of in a municipal landfill.

We would also excavate and dispose of off site any soil containing PCBs above 1 ppm within a 20-foot distance from the building. Pre-demolition activities would include an asbestos and lead paint survey and abatement step, removal and disposal of mercury-containing electrical switches, removal and disposal or recycling of machinery still left in the building, and removal of the PCB-containing electrical transformer on the roof of the building. Post-demolition activities would include sampling and analysis to demonstrate that the cleanup was completed and the backfilling of clean soil or fill material into excavated areas as appropriate.

After we completed the design stage and when funding was available, all construction activity for Alternative 2B could be completed in about 16-20 months. The estimated total cost to implement Alternative 2B is \$13.3 million.

The proposed cleanup work would yield a cleaned surface area the size of the building footprint plus 20 feet around, an estimated 42 acres or so, that would be ready for re-use for residential, recreational, and/or commercial/industrial purposes. Further work would likely be necessary to clean up the groundwater and DNAPL areas beneath the site, but we would no longer need to address or monitor the cleaned-up surface areas.

Alternative 3B: Building Demolition with Off-site Disposal and On-site Consolidation

Under Alternative 3B we would demolish the PCB-contaminated portions of the OMC

Plant 2 building, including impacted concrete floors. We would try to decontaminate as much of the structure as possible so that we may recycle steel, copper, concrete, and equipment. All materials that cannot be decontaminated and exceeding 50 ppm PCBs (or 100 $\mu\text{g}/100\text{ cm}^2$) will be sent off site for disposal a licensed TSCA-compliant facility. All materials that cannot be decontaminated and exceeding 1 ppm PCBs (or 10 $\mu\text{g}/100\text{ cm}^2$) would be consolidated on the north side of the OMC Plant 2 site between the existing PCB containment cells (see Figure 3). We would also excavate and dispose of off site and/or consolidate on site, as above, any contaminated soil within 20 feet of the building. Demolition material for consolidation on site would be placed on the ground without a bottom liner and then covered with 12 inches of clean soil and seeded.

Pre-demolition activities would include an asbestos and lead survey and abatement step, removal of mercury-containing electrical switches, and removal of the PCB-containing electrical transformer on the roof of the building. Post-demolition activities would include sampling and analysis to demonstrate that the cleanup was completed and the backfilling of excavated soil areas, as appropriate.

After we completed the design stage and when funding was available, all construction activity for Alternative 3B could be completed in about 17-20 months. The estimated total cost to implement Alternative 3B is \$12.2 million.

The proposed cleanup work would yield a surface area the size of the building footprint plus 20 feet, an estimated 42 acres or so, that would be ready for re-use for residential, recreational, and/or commercial/industrial purposes. Further work would likely be necessary to clean up the groundwater and DNAPL areas of the site, but we would no longer need to address or monitor the cleaned up area. However, U.S. EPA and then the state or the city of Waukegan or any subsequent purchasers of the site would need to monitor and maintain the on-site consolidation area well into the future.

Alternative 4B: Building Demolition with Off-site Disposal and On-site Consolidation, With Co-Disposal of Harbor Sediment

Under Alternative 4B we would demolish the PCB-contaminated portions of the OMC Plant 2 building, including impacted concrete floors. We would try to decontaminate as much of the structure as possible so that we may recycle steel, copper, concrete, and equipment. All materials that cannot be decontaminated and exceeding 50 ppm PCBs (or 100 $\mu\text{g}/100\text{ cm}^2$) will be sent off site for disposal a licensed TSCA-compliant facility. All materials that cannot be decontaminated and exceeding 1 ppm PCBs (or 10 $\mu\text{g}/100\text{ cm}^2$) would be consolidated on the north side of the OMC Plant 2 site between the existing PCB containment cells. We would also excavate and dispose of off site and/or consolidate on site, as above, any contaminated soil within 20 feet of the building. Demolition material for consolidation on site would be placed on the ground without a bottom liner and then covered with 12 inches of clean soil and seeded.

The cleanup plan under Alternative 4B is identical to Alternative 3B in that we would design and build the consolidation area without a bottom liner system but also construct it to allow for the placement of Waukegan Harbor sediment (see Alternative 4S). After all materials were placed into the consolidation area it would be covered with 12 inches of clean soil and seeded.

After we completed the design stage and when funding was available, all construction activity for Alternative 4B could be completed in about 17-20 months. The estimated total cost to implement Alternative 4B is \$12.9 million.

The proposed cleanup work would yield a surface area the size of the building footprint plus 20 feet, an estimated 42 acres or so, that would be ready for re-use for residential, recreational, and/or commercial/industrial purposes. Further work would likely be necessary to clean up the groundwater and DNAPL areas of the site, but we would no longer need to address or monitor the cleaned up area. However, U.S. EPA and then the state or the city of Waukegan or any subsequent purchasers of the site would need to monitor and maintain the on-site consolidation area well into the future.

J. Summary of Comparative Analysis of Alternatives

U.S. EPA evaluated the proposed alternatives using the Nine Criteria:

Overall protection of human health and the environment - addresses whether a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

All of the alternatives, except for the no-action alternatives, are protective of human health and the environment because they would eliminate, reduce, or control actual or potential health risks through engineering controls. Each action alternative for the soil and sediment media reduces exposure due to direct contact and ingestion through excavation of contaminated material with off-site disposal in an engineered landfill and/or on-site consolidation beneath a soil cover. Similarly each action alternative for the building media reduces exposure due to direct contact through demolition of the building with off-site disposal in an engineered landfill and/or on-site consolidation beneath a soil cover. However, perpetual cover maintenance would be required to maintain on-site protectiveness. The on-site consolidation areas could be constructed without a bottom liner system because the low levels of PCBs would not be projected to move off site once beneath the soil cover because PCBs are not soluble.

Note: U.S. EPA will evaluate the need for institutional controls for the OMC Plant 2 site in the subsequent ROD covering potential groundwater and DNAPL cleanup remedies.

Compliance with ARARs (Applicable or Relevant and Appropriate Requirements) - addresses whether a remedy will meet all applicable or relevant and appropriate requirements of federal and state environmental laws or provides a basis for invoking a waiver of any of the requirements.

All of the alternatives, except for the no-action alternatives, would attain federal and state ARARs specific to each. On-site consolidation of soil, sediment, or building debris could require attainment of ARARs associated with a soil cover or cap.

Long-term effectiveness and permanence - refers to the ability of a remedy to maintain reliable protection of human health and the environment over time after clean-up goals have been met.

All of the alternatives, except for the no-action alternatives, provide some degree of long-term protection. The on-site consolidation remedies would rely on maintenance of engineered containment structures to be effective at the site. U.S. EPA would need to perform Five-Year Reviews at the site because material would be left on-site above health-based levels. The off-site disposal alternatives rely on the engineered controls in place at the receiving landfill(s) to be protective (at the landfill site(s)) although at the OMC Plant 2 site the action would be permanent because the contaminants would have been removed.

Reduction of toxicity, mobility, or volume - refers to the anticipated performance of the treatment technologies a remedy may employ.

None of the alternatives use treatment to reduce toxicity, mobility, or volume of contamination at the site because the materials being addressed do not constitute principal threats (see Section K).

Short-term effectiveness - involves the period of time needed to achieve protection and any adverse impacts on human health and environment that may be posed during construction and implementation of a clean-up action.

All of the alternatives, except for the no-action alternatives, involve some degree of short-term exposure by cleanup workers to dust or heavy equipment during construction. Temporary engineering controls such as air monitoring, protective clothing, and following health and safety protocols would be used to reduce potential exposures. Each action alternative achieves protectiveness in generally the same amount of time – about 16-20 months.

The no-action alternatives would not be effective because current risks would remain.

Implementability – refers to the technical and administrative feasibility of a remedy, including availability of goods and services needed to carry out the chosen option.

All alternatives are easily implemented. Goods and services are readily available to implement the action alternatives.

Cost - includes estimated capital and operation and maintenance costs and estimated present-worth costs.

The no-action alternatives cost nothing to implement. The estimated present worth costs for the action alternatives total about \$17 million to \$20 million.

State agency acceptance - indicates whether, based on comments submitted after its review of the Proposed Plan, a support agency concurs, opposes, or has no comment on the preferred alternative.

Illinois EPA has indicated that it does not support the no-action alternatives.

Community acceptance - refers to the assessment of public comments received on the Proposed Plan.

The community expressed support for the action alternatives, with a preference for those that did not coordinate with the projected Waukegan Harbor cleanup action.

Table 4 summarizes the evaluation of clean-up alternatives for the OMC Plant 2 site versus the nine criteria.

Proposed Plan

U.S. EPA's proposed plan for the soil and sediment and building media at the OMC Plant 2 site was to implement Alternatives 4S and 4B – the cleanup options that incorporated a provision for on-site co-consolidation of harbor sediment with site soil and sediment below 50 ppm PCBs.

K. Principal Threat Wastes

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes an expectation that U.S. EPA will use treatment technology to address the principal threat wastes at a site wherever practicable (NCP § 300.430(a)(1)(iii)(A)). Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. Remedies that involve treatment of principal threat wastes likely will satisfy the statutory preference for treatment as a principal element.

Table 4: Evaluation of remedial alternatives using the Nine Criteria

Criterion	No Action Alternative	Alternative 2B/2S	Alternative 3B/3S	Alternative 4B/4S
Protection of human health and the environment	Is not protective	Is protective	Is protective	Is protective
Meets ARARs	No	Yes	Yes**	Yes**
Long term effectiveness	Is not effective	Is effective	Is effective	Is effective
Reduction of toxicity, mobility, or volume	None	None	None	None
Short-term effectiveness	No construction needed	16-20 months to complete	17-20 months to complete	17-20 months to complete
Implementability	Easily implemented	Easily implemented	Easily implemented	Easily implemented
Cost	None	\$20.6 million	\$17.6 million**	\$18.8 million**
State acceptance	No	Yes	Yes**	Yes**
Public acceptance	No	Yes	Yes	Yes, but prefer Alternative 2 or 3

**Illinois EPA has indicated that in order to meet state ARARs the on-site consolidation area must comply with the requirements of 35 Illinois Administrative Code 811. The FS did not evaluate on-site alternatives that complied with this ARAR. If the on-site consolidation alternatives met this requirement the state would support the respective alternatives. However, the remedy costs would greatly increase (see Section L).

U.S. EPA considers the PCBs and PAHs in site soil and sediments and the PCBs in the building to constitute a low level, long term threat to human health or the environment, and therefore they are not principal threat wastes. We consider the DNAPL media to be a principal threat waste, but we plan to address this media in a later ROD. Thus, the statutory preference for treatment as a principal element would not apply to the soil and sediment and the building media.

L. Selected Remedy

U.S. EPA selects **Alternative 2S and 2B - Excavation of Soil and Sediment and Building Demolition with Off-site Disposal** to clean up the soil and sediment and the building media at the OMC Plant 2 site.

Rationale for Selection

We did not select the No Action alternatives for the soil and sediment and building media because they are not protective of human health and the environment and would not meet ARARs. Alternatives 2, 3, and 4 for each media would protect human health and the environment over the long term by removing potentially harmful levels of COCs from the site, meet ARARs (except as noted below), and are easily implemented over a short time period. The decisive factors in our selection of **Alternatives 2S and 2B** over Alternatives 3S and 3B or Alternatives 4S and 4B are public acceptance, cost, state acceptance, and long-term effectiveness.

First, several people and the city of Waukegan sent public comments advising against tying the potential harbor cleanup plan together with the OMC Plant 2 cleanup actions (Alternatives 4S and 4B) mostly because a delay in starting the harbor portion of the cleanup could delay the OMC Plant 2 site portions of the cleanup. U.S. EPA agrees with this concern (see the Responsiveness Summary for a more complete discussion of public comments).

Second, although Alternatives 3S and 3B are the least costly alternatives for the site as presented in the FS Report, Illinois EPA has indicated that in order for the on-site consolidation remedies to comply with State ARARs (specifically 35 Illinois Administrative Code (IAC) Section 811 – see Table 6), a containment cell meeting the requirements of 35 IAC 811 should be constructed as a part of the remedy. U.S. EPA has prepared a cost analysis for this approach for Alternatives 3S and 3B and determined that to meet the requirements of 35 IAC 811 at the site the total cost of implementing Alternatives 3S and 3B would rise to about \$20.5 million. This would match the cost of conducting Alternatives 2S and 2B. The State could accept either cleanup approach as a result.

Thus, since the estimated cost of conducting Alternatives 2S and 2B equal that of the modified Alternatives 3S and 3B, U.S. EPA has determined that Alternatives 2S and 2B

are the preferred alternatives because there would be no requirements for long term efforts to operate and maintain any new containment cells built at the site.

Description of the Selected Remedy

Alternative 2S consists of the excavation of nearly 40,000 yds³ of soil and of North Ditch and South Ditch sediment containing greater than 1 ppm PCBs and/or 2 ppm PAHs. About 1500 yds³ of excavated material is estimated to contain greater than 50 ppm PCBs and would be transported by truck for off-site disposal into a TSCA-compliant facility. The remainder of the excavated material would be transported by truck for off-site disposal into a municipal landfill facility. Excavated areas would be backfilled to grade with clean soil and revegetated.

Alternative 2B would consist of the demolition of the remaining 600,000 sq. ft. of the PCB-impacted OMC Plant 2 building with off-site disposal into a TSCA-compliant facility of an estimated 1600 tons of debris and 9500 tons of concrete that is at 50 ppm PCBs or more. About 40,000 tons of debris and concrete and 11,000 yds³ of impacted soil around the building would be transported by truck for off-site disposal into a municipal landfill facility. Nearly 4000 tons of steel are estimated to be available for recycling.

Prior to demolition we will conduct an asbestos and lead survey in the structure and perform any necessary removal steps. For example, pipe insulation and floor tiles would be tested and disposed of off site if found to contain asbestos fibers. We will also attempt to decontaminate PCB-impacted porous and nonporous surfaces prior to demolition mainly to accommodate the recycling of steel and metal equipment.

Note: U.S. EPA may require institutional controls (ICs) to be placed on the site to assist in the maintenance of the overall OMC Plant 2 site remedy protectiveness. However, we plan to address the need for ICs in the subsequent groundwater and DNAPL ROD.

Cost Estimate for the Selected Remedy

Major cost elements of the selected remedies are shown in Table 5, below.

Expected Outcome of the Selected Remedy

After U.S. EPA completes Alternatives 2S and 2B, there will be residual PCBs and PAHs in the soil and sediment at or below a nominal 5×10^{-6} ELCR to future residential and recreational users of the property. Except for the existing PCB containment cell areas the surface areas of the site could be immediately ready for reuse without restrictions (subject to future groundwater and DNAPL cleanup work). Sensitive duneland environment would be restored. However, we would still have to address groundwater and DNAPL issues and ICs in a future proposed plan and ROD.

Table 5: Major cost elements of Alternatives 2S and 2B

Capital Cost Items	Alternative 2S	Alternative 2B
Soil or Sediment Excavation	\$ 985,000	\$ 225,000
Confirmation Sampling	\$ 420,000	\$ 200,000
Transport and Disposal – off site	\$ 2,120,000	\$ 800,000
Backfill	\$ 725,000	\$ 205,000
Building Decontamination – includes asbestos	N/A	\$ 1,200,000
Building Demolition – net of recycling	N/A	\$ 1,190,000
Slab Demolition and disposal	N/A	\$ 3,880,000
Subtotals	\$ 4,250,000	\$ 7,700,000
Mobilization, Contingency, Project Management and on-site Construction Management	\$ 3,050,000	\$ 5,600,000
Operation and Maintenance Present Worth at 7% over years 1 to 50	\$ 0	\$ 0
Totals	\$ 7,300,000	\$ 13,300,000

Notes: Excludes design costs estimated in FS Report. Volume estimates may be refined during the remedial design, potentially impacting cost estimates. Accuracy is within +50% or – 30% range.

M. Statutory Determinations

Section 121 of CERCLA (42 U.S.C. § 9621) and the NCP state that the lead agency must select remedies for Superfund sites that are protective of human health and the environment, comply with applicable or relevant and appropriate requirements (unless a statutory waiver is justified), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element and a bias against off-site disposal of untreated wastes. The following sections discuss how Alternatives 2S and 2B meet these statutory requirements.

1. Protection of Human Health and the Environment

Alternatives 2S and 2B will protect human health and the environment by removing or reducing the COCs at the site to meet recommended cleanup levels. This will reduce to acceptable levels the threat of exposure to COCs via direct contact and ingestion. U.S. EPA estimated that the actual or potential ELCR associated with these exposure pathways is as high as 2×10^{-4} . Alternatives 2S and 2B will reduce the potential ELCR from exposure to site soil contaminants to about 5×10^{-6} . This level falls within our target risk range of 1×10^{-4} to 1×10^{-6} . Alternatives 2S and 2B have no short-term threats to human health or the environment that cannot be readily controlled as the cleanup is implemented.

2. Compliance with Applicable or Relevant and Appropriate Requirements, Including Other Criteria, Advisories, or Guidance To Be Considered (TBCs)

Alternatives 2S and 2B will comply with all ARARs and identified TBCs. Table 6 presents federal and State of Illinois ARARs and TBCs.

3. Cost-Effectiveness

U.S. EPA has determined that Alternatives 2S and 2B are cost-effective and represent a reasonable value for the estimated expenditure. We made this determination using the following definition of cost-effectiveness from the NCP: "A remedy shall be cost-effective if its costs are proportional to its overall effectiveness." (NCP § 300.430(f)(1)(ii)(D)). Alternatives 2, 3, and 4 for each media satisfy the threshold criteria (i.e., are protective of human health and the environment and comply with ARARs) and essentially equally satisfy four of the five balancing criteria (short-term effectiveness, long-term effectiveness and permanence, implementability, and reduction in toxicity, mobility, and volume through treatment). Alternatives 2S and 2B cost about the same as Alternatives 3S and 3B (if modified and the cost to construct a containment cell compliant with 35 IAC 811 is included) and likely less than Alternatives 4S and 4B (if modified and the cost to construct a containment cell compliant with 35 IAC 811 is included). Thus, Alternatives 2S and 2B are cost-effective because they cost less than Alternatives 4S and 4B (if modified) and do not require long term operation and maintenance like Alternatives 3S and 3B would.

4. Utilization of Permanent Solutions and Alternative Treatment Technologies (or Resource Recovery Technologies) to the Maximum Extent Practicable

Alternative 2S and 2B (and the other action alternatives) would be using permanent solutions and treatment technologies to the maximum extent practicable. We are not treating the excavated wastes because they are not principal threat wastes, but we would be performing a very small amount of treatment associated with the building surface decontamination efforts to allow for recycling of steel and other materials.

5. Preference for Treatment as a Principal Element

See Section K, above. Since there are no wastes identified as principal threats in the soil and sediment and building media, the statutory preference for treatment as a principal element does not apply.

Five-Year Review Requirement

After U.S. EPA constructs Alternatives 2S and 2B at the OMC Plant 2 site there will be no residual PCB or PAH contaminants remaining on-site above levels that do not allow for unrestricted use (UU) and unrestricted exposure (UE) except in the existing PCB containment cells. Normally, cleaning up a NPL site to allow for UU/UE would preclude our need to conduct a Five-Year Review (FYR) for that site. However, we have completed two FYR Reports for the OMC site (in 1997 and 2002) and we plan to complete the third FYR in 2007 (and the fourth FYR in 2012) because, after OMC performed the initial harbor cleanup actions in 1990-1992, it left residual contaminants on-site (in the PCB containment cells) above levels that do not allow for UU/UE. Additionally, cleanup work at the Waukegan Coke Plant site is still underway and we have yet to address OMC Plant 2 site groundwater and DNAPL contaminants. Thus, we will continue to conduct a statutory FYR at the OMC site every five years to ensure that the cleanup remedies selected in this ROD and all others are, or will be, protective of human health and the environment.

N. Documentation of Significant Changes

U.S. EPA released the Proposed Plan for the OMC Plant 2 site for public comment on January 3, 2007. Our Proposed Plan identified Alternatives 4B and 4S as the preferred alternatives for the soil and sediment and building media. We reviewed all written and verbal comments submitted during the public comment period and determined that a significant change to the remedy as originally presented in the Proposed Plan was desirable or appropriate.

The significant change is the selection of Alternatives 2S and 2B to clean up the site instead of Alternatives 4S and 4B. This effectively decouples the OMC Plant 2 site cleanup actions from the potential Waukegan Harbor cleanup action under the Great Lakes Legacy Act (GLLA). We agreed with several commenters' concerns with timing (e.g. would one project hold up the other waiting for funding) and whether the harbor cleanup project would actually proceed under the GLLA.

Table 6: ARARs Evaluation for OMC Plant 2

Regulation	Requirement	ARAR Status	Analysis
Chemical-Specific ARARs			
Toxic Substance Control Act (TSCA) (15 U.S.C. §2601 et seq.)	Establishes requirements and thresholds for management of PCBs.	ARAR	TSCA is applicable to remedial actions managing soil contaminated with PCBs (see action-specific ARARs). TSCA is relevant and appropriate as to defining the management of PCBs in soil.
Illinois Administrative Code (IAC) Title 35, Part 742, Tiered Approach to Corrective Action Objectives (TACO)	Establishes a framework for determining remediation objectives standards and establishing institutional controls. Tier 1 remediation objectives are set at 10^{-6} ELCR and HI =1 values. Section 742.900(d) Tier 3 remediation objectives allows cleanup levels within the ELCR range of 10^{-4} to 10^{-6} .	TBC	TACO is a voluntary program and is not required (Part 742.105 (a)). It provides guidance for development of site-specific remediation objectives.
IAC Title 35, Part 212 Visible and Particulate Matter Emissions	Regulations contain specific requirements that pertain to allowable emissions of fugitive particulate matter.	ARAR	Dust control must be implemented to control visible particulate emissions during construction activities.
IAC Title 35, Part 245 Odors	Regulations specify how to determine whether a nuisance odor is present.	TBC	Odor control may be necessary if it is determined that a nuisance odor is present. Is a TBC because odor control is usually not health-based requirement.
Location-Specific ARARs			
Coastal Zone Management Act 16 USC §1451 et. seq. 15 CFR §930	Requires that federal agencies conducting activities directly affecting the coastal zone conduct those activities in a manner that is consistent, to the maximum extent practicable, with approved state coastal zone management programs.	ARAR	Applicable to construction in the coastal zone.
Endangered Species Act of 1973 16 USC §1531 et seq. 50 CFR §200	Requires that federal agencies ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify critical habitat.	ARAR	In the future redevelopment scenario, potential risks to threatened and endangered plant and animal species that may colonize created habitat are present. Risks are a result of the current concentrations of PCBs and PAHs in soil.

Table 6: ARARs Evaluation for OMC Plant 2

Regulation	Requirement	ARAR Status	Analysis
National Historical Preservation Act 16 USC §661 et seq. 36 CFR Part 65	Establishes procedures to provide for preservation of scientific, historical, and archaeological data that might be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program. If scientific, historical, or archaeological artifacts are discovered at the site, work in the area of the site affected by such discovery will be halted pending the completion of any data recovery and preservation activities required pursuant to the act and its implementing regulations.	ARAR	Could impact remedial activities if scientific, historic, or archaeological artifacts are identified during implementation.
Protection of Wetlands—Executive Order 11990 50 CFR Part 6, Appendix A	Requires actions to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Appendix A requires that no remedial alternatives adversely affect a wetland if another practicable alternative is available. If none is available, effects from implementing the chosen alternative must be mitigated. Public notice and review of activities involving wetlands is required.	TBC	A TBC because Executive Orders are not ARARs. The ecological risk assessment concluded that significant wetlands or aquatic habitat are not present onsite. Small wetlands were identified along the North Ditch and South Ditch between the site and Lake Michigan.
Executive Order 11988 50 CFR Part 6, Appendix A	Requires actions to reduce the risk of flood loss; to minimize the impact of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains.	TBC	Site is generally not within a floodplain, except for the North Ditch and South Ditch areas.
Action-Specific ARARs			
Fish and Wildlife Coordination Act 16 USC §661 et seq.	The Act provides protection and consultation with the U.S. Fish and Wildlife Service and state counterpart for actions that would affect streams, wetlands, other water bodies, or protected habitats. Action taken should protect fish or wildlife, and measures should be developed to prevent, mitigate, or compensate for project-related losses.	ARAR	Construction activities performed during the implementation of remedies that may affect the North Ditch and South Ditch or piping plover habitat will require consultation with U.S. F&WS

Table 6: ARARs Evaluation for OMC Plant 2

Regulation	Requirement	ARAR Status	Analysis
Clean Air Act; National Ambient Air Quality Standards (NAAQS) Section 109 40 CFR §§50-99	<p>The Clean Air Act is intended to protect the quality of air and promote public health. Title I of the Act directed the USEPA to publish national ambient air quality standards for "criteria pollutants." In addition, USEPA has provided national emission standards for hazardous air pollutants under Title III of the Clean Air Act. Hazardous air pollutants are designated hazardous substances under CERCLA.</p> <p>The Clean Air Act amendments of 1990 greatly expanded the role of National Emission Standards for Hazardous Air Pollutants by designating 179 new hazardous air pollutants and directed USEPA to attain maximum achievable control technology standards for emission sources. Such emission standards are potential ARARs if remedial technologies (such as incinerators or air strippers) produce air emissions of regulated hazardous air pollutants.</p> <p>Specifies requirements for air emissions such as particulates, sulfur dioxide, VOCs, hazardous air pollutants, and asbestos.</p>	ARAR	Is ARAR for remedies that involve creation of air emissions, such as excavation activities that might create dust or treatment systems that might emit volatile organic compounds.
Hazardous Materials Transportation Act; 49 CFR §§100-109 Transportation of hazardous materials.	Specific DOT requirements for labeling, packaging, shipping papers, and transport by rail, aircraft, vessel, and highway.	Applicable	Off-site shipment of hazardous waste may occur.
Resource Conservation and Recovery Act (RCRA) 42 U.S.C. §321 et seq.	RCRA was passed in 1976. It amended the Solid Waste Disposal Act by including provisions for hazardous waste management. Authority for implementation of RCRA in Illinois was delegated to the State of Illinois. See Illinois ARARs below under Title 35 IAC Parts 720 to 730.	Possible ARAR	There is no documented evidence of disposal of listed hazardous waste at the site. Soil excavated for offsite disposal may be characteristic hazardous waste. See Illinois ARARs below for more details of specific requirements.

Table 6: ARARs Evaluation for OMC Plant 2

Regulation	Requirement	ARAR Status	Analysis
40 CFR §268 Land Disposal Restrictions	The land disposal restrictions require treatment before land disposal for a wide range of hazardous wastes.	Possible ARAR	ARAR for disposal of hazardous waste. Applicable to soils that are a characteristic hazardous waste or that contain a listed waste. Contaminated soils must meet the highest of 10 x the universal treatment standard or a 90% reduction of the contaminant concentration.
Toxic Substances Control Act (TSCA) 15 U.S.C. §2601 et seq. PCB Remediation Wastes: 40 CFR §761.61	The Toxic Substances Control Act, created in 1976, instituted a range of control measures, primarily record-keeping and reporting requirements, to document the production and use of hazardous chemicals, primarily PCBs. Specifies requirements for self-implementing on-site cleanup of PCB remediation waste.	ARAR	The Act applies to remedies that involve sites with PCB contamination. Requirements are not binding on CERCLA sites. 761.61(a) – self-implementing option for cleanup.
TSCA Cleanup Levels. 40 CFR §761.61(a)(4)	Bulk remediation waste cleanup levels are set forth for porous and non-porous surfaces.	ARAR	Requirements are not binding on CERCLA sites.
TSCA Site Cleanup. 40 CFR § 761.61(a)(5)(B)(2)(iii).	Bulk remediation waste disposal (e.g.): PCBs > 50 mg/kg must be disposed of in a TSCA chemical waste landfill or a RCRA hazardous waste. PCBs < 50 mg/kg may be disposed in Subtitle D Solid Waste landfill permitted for this waste.	ARAR	Excavated soils for offsite disposal with PCBs > 50 mg/kg will be disposed in accordance with these requirements. Non-porous and porous material will be disposed in accordance with TSCA requirements.
TSCA (40 CFR §761.65) Storage for Disposal	Bulk PCB remediation waste containing > 50 mg/kg PCBs may be stored onsite for up to 180 days, provided controls are in place for prevention of dispersal by wind or generation of leachate. Storage site requirements include a foundation below the liner, a liner, a cover, and a run-on control system.	ARAR	ARAR for excavated soils with PCBs > 50 mg/kg that are stored onsite before off-site disposal is arranged and carried out. An extension on the 180-day storage limit could be obtained if needed through a notification to EPA per 40 CFR 761.65 (a).
IAC Title 35, Environmental Protection, Subtitle B: Air Pollution	This part describes permits and emission standards to protect air quality.	ARAR	Portions are ARAR for remedies that involve creation of air emissions, such as excavation activities that might create dust or treatment systems that might emit VOCs.

Table 6: ARARs Evaluation for OMC Plant 2

Regulation	Requirement	ARAR Status	Analysis
IAC Title 35, Part 212, Subpart K, Fugitive Particulate Matter.	Site construction and processing activities would be subject to Sections 212.304 to .310 and .312 which relate to dust control.	ARAR	Remedial action may generate fugitive dust. Rules require dust control for storage piles, conveyors, on-site traffic, and processing equipment.
IAC Title 35, Part 228 Asbestos	Requirements to limit asbestos emissions from a variety of sources including demolition.	ARAR	Soil excavation and especially building demolition would need to consider presence of asbestos and limit emissions if present.
IAC Title 35, Subtitle G: Waste Disposal, Subchapter C: Hazardous Waste Operating Requirements, Parts 720- 729.	<p>RCRA was passed in 1976. It amended the Solid Waste Disposal Act by including provisions for hazardous waste management. The statute sets out to control the management of hazardous waste from inception to ultimate disposal. RCRA is linked closely with CERCLA, and the CERCLA list of hazardous substances includes all RCRA hazardous wastes.</p> <p>RCRA applies only to remedies that generate hazardous waste. IEPA has been given authorization to implement RCRA in Illinois.</p> <p>Standards applicable to hazardous waste generators, transporters and operators of hazardous waste treatment storage and disposal facilities.</p>	Possible ARAR	There is no documented evidence of disposal of listed hazardous waste at the site. Soil excavated for onsite ex situ treatment or offsite disposal may however be characteristic hazardous waste.
IAC Title 35, Subchapter C, Hazardous Waste Operating Requirements; Part 721	Soils must be managed as hazardous waste if they contain listed hazardous waste or are characteristic hazardous waste. Management of treatment residuals subject to RCRA if residuals retain characteristic.	Possible ARAR	There is no documented evidence of disposal of listed hazardous waste at the site. Soil excavated for onsite ex situ treatment or offsite disposal may however be characteristic hazardous waste.
Identification and listing of hazardous waste.			
IAC Title 35, Subchapter C, Part 722; Standards applicable for generators of hazardous waste.	Establishes regulation covering activities of generators of hazardous wastes. Requirements include ID number, record keeping, and use of uniform national manifest.	Applicable	Applicable if wastes are RCRA hazardous and are shipped off-site for disposal.
IAC Title 35, Subchapter C, Part 723 Standards applicable for transporters of hazardous waste.	The transport of hazardous waste is subject to requirements including DOT regulations, manifesting, record keeping, and discharge cleanup.	Applicable	Applicable if wastes are RCRA hazardous and go off-site.

Table 6: ARARs Evaluation for OMC Plant 2

Regulation	Requirement	ARAR Status	Analysis
IAC Title 35, Subchapter C, Part 724.210 to 724.220 Subpart G—Closure and Post-closure	General closure and post-closure care requirements. Closure and post-closure plans (including operation and maintenance), site monitoring, record keeping, and site use restriction.	Relevant and Appropriate	RCRA is not applicable for closure of site because site is not a RCRA hazardous waste treatment, storage or disposal facility. Hazardous wastes are not known to be present on-site.
IAC Title 35, Subchapter C, Part 724.270 to 724.279 Subpart I—Use and Management of Containers	Standards applicable for owners and operators of hazardous waste facilities that store containers of hazardous waste.	ARAR	ARAR if remedy uses containers for storage of hazardous waste before shipment off-site.
IAC Title 35, Subchapter C, Part 724.650 to 724.655 Subpart S—Special Provisions for Cleanup	Standards applicable for corrective action management units, temporary units and staging piles.	ARAR	Staging piles or temporary units would be needed for soil if found to be a characteristic hazardous waste.
IAC Title 35, Subchapter C, Part 728	Identifies land disposal restrictions and treatment requirements for materials subject to restrictions on land disposal. Must meet waste-specific treatment standards prior to disposal in a land disposal unit.	Possible ARAR	ARAR for disposal of hazardous waste. Applicable to soils that are a characteristic hazardous waste or that contain a listed waste.
IAC Title 35, Subtitle G: Subchapter F: Part 742. Tiered Approach to Remedial Action Objectives.	<p>The purpose of this part is to establish the procedures for investigative and remedial activities at sites where there is a release, threatened release, or suspected release of hazardous substances, pesticides, or petroleum, and for the review of those activities; establish procedures to obtain IEPA review and approval of remediation costs for the environmental remediation tax credit; and establish and administer a program for the payment of remediation costs as a brownfield site.</p> <p>Presents requirements for the tiered approach to corrective action objectives (TACO). Tier 1 remediation objectives are set at 10⁻⁶ ELCR and HI ≈1 values. Section 742.900(d) Tier 3 remediation objectives allows cleanup levels within the ELCR range of 10⁻⁴ to 10⁻⁶.</p>	TBC	TACO is a voluntary program and is not required (Part 742.105 (a)). Provides guidance for development of site-specific soil remediation objectives.

Table 6: ARARs Evaluation for OMC Plant 2

Regulation	Requirement	ARAR Status	Analysis
IAC Title 35, Parts 807-810 Solid Waste and Special Waste Hauling	This part describes requirements for solid waste and special waste hauling. Special waste must be treated, stored or disposed at a facility permitted to manage special waste. Presents the special waste classes and the method to determine whether the solid waste is a special waste and if so, whether it is Class A (all non-Class B special wastes) or Class B (low or moderate hazard special wastes). RCRA hazardous waste is not included within the special waste classes.	Applicable	Applicable for off-site disposal of solid waste and special waste. Contaminated soil that is not a RCRA hazardous waste would be evaluated to determine whether it is a Class A or B special waste. Offsite disposal of special waste must be at a Solid Waste landfill permitted to receive that special waste class unless IEPA specifically allows otherwise.
Lake County Stormwater Management Commission, Watershed Development Ordinance	Regulations specify performance standards for stormwater control.	ARAR	ARAR. Remedial actions need to be evaluated relative to stormwater controls if they disturb more than 5,000 sq. ft. of soil.

RESPONSIVENESS SUMMARY

OMC Plant 2 Site Waukegan, Lake County, Illinois

U.S. EPA met the public participation requirements of Sections 113(k)(2)(B)(i-v) and 117(b) of CERCLA (42 U.S.C. §§ 9613(k)(2)(B)(i-v) and 9617(b)) during the remedy selection process for the OMC Plant 2 operable unit of the OMC, Inc. site. Sections 113(k)(2)(B)(iv) and 117(b) require U.S. EPA to respond "...to each of the significant comments, criticisms, and new data submitted in written or oral presentations" on a proposed plan for a remedial action. This Responsiveness Summary addresses those concerns expressed by the public, potentially responsible parties (PRPs), and governmental bodies in written and oral comments we've received regarding the proposed remedy for the site.

U.S. EPA has established information repositories for the OMC site at the following locations:

- U.S. EPA - Region 5, Records Center, 77 W. Jackson Blvd., Chicago, IL 60604
- Waukegan Public Library, 128 N. County St., Waukegan, IL 60085

The Administrative Record containing all information we used to select the cleanup remedy for the OMC Plant 2 operable unit is also available to the public at these locations.

Background

Outboard Marine Corporation, Inc., declared bankruptcy in December 2000 and filed to legally abandon the OMC Plant 2 property in summer 2002. U.S. EPA performed several emergency removal actions at the OMC Plant 2 site from 2002-2006 to stabilize the site and to prevent imminent and substantial endangerment to human health and the environment due to contaminants present at the site. The bankruptcy court allowed the OMC bankruptcy trustee to abandon the OMC Plant 2 property in December 2002.

In consultation with Illinois EPA, we began a remedial investigation and feasibility study at the OMC Plant 2 site in fall 2004. We sampled the soil, sediment, interior building surfaces, and groundwater at the site for contaminants. We performed a human health and an ecological risk assessment using our sampling data to determine actual or potential risks to human health and the environment posed by site contaminants. We completed the remedial investigation in April 2006 and released a feasibility study for cleanup of the site in December 2006.

On about December 29, 2006, U.S. EPA issued a proposed plan fact sheet to the public to summarize the results of the remedial investigation for the OMC Plant 2 operable unit and to present our recommended cleanup remedies for the contaminated

soil and building portions of the site. The proposed plan was available for public comment from January 2 through February 3, 2007. We placed an advertisement announcing the availability of the proposed plan and the start of the comment period in the *News-Sun*, a local newspaper of wide circulation in the Waukegan area. Staff also hand-delivered fact sheets translated into Spanish to area churches for distribution. Each fact sheet contained an EPA-addressed comment page to facilitate receipt of mailed comments. We accepted written, e-mailed, or faxed comments during the comment period.

U.S. EPA held a public meeting and public hearing at Waukegan City Hall on January 11, 2007, to discuss the results of the remedial investigation, to answer any questions regarding the proposed cleanup actions, and to take oral comments regarding the proposed cleanup actions. The public meeting was attended by more than 40 persons including local residents. A court reporter documented formal oral comments on the proposed plan during the public meeting, and we placed a verbatim transcript of the public comments into the information repositories and the Administrative Record. We received 2 oral comments concerning the proposed plan at the public meeting.

U.S. EPA received 12 written (by letter, e-mail, or fax) comments concerning the proposed plan during the comment period. The comments received during the public comment period and our responses to these comments are included in this Responsiveness Summary which is a part of the Record of Decision for the OMC Plant 2 site.

Summary of Significant Comments

A. Written Comments

1. William Weber, Waukegan, IL: "Get rid of the OMC [building] and PCBs whatever the cost. A renovated beachfront would be a priceless asset for a century. Give Waukegan and its citizens something to be proud of." [via e-mail]

Response: U.S. EPA believes that alternatives 2B and 2S offer a safe, effective, and cost-effective approach to cleaning up the OMC Plant 2 site. We agree that the proposed site cleanup actions could help turn the site property into an asset for the people of Waukegan and Lake County.

2. Adam Weber, Beach Park, IL: "...the immense potential of this location leads me to think that EPA should pursue the most thorough cleanup as possible. While the differences between the proposed plans (2B-4B and 2S-4S) are not as clear as I would like, it is exciting to think this land could potentially be used as a commercial or even residential area. I am in favor of the plan that allows for the broadest potential use of this area." [via e-mail]

Response: Alternatives 2B/2S would allow for the widest site re-use possibilities since all excavation wastes and building demolition waste would be hauled off-site for disposal.

3. Robert Braden, Waukegan, IL: "I am writing to submit my concerns related to the proposed cleanup plan for the Outboard Marine Corp., Inc. Plant 2 Site, Waukegan, IL.

- a. It seems to me that cleanup of site 2 is being coordinated with the plan to dredge the harbor and conveniently have a ready –made disposal site for the harbor sediment. If this is not done simultaneously, it means that the containment berm would be uncapped, reopened, and recapped. Is the cleanup of OMC site 2 contingent upon dredging of the harbor? If the harbor is not dredged will the cleanup of Site 2 be approved?

Response: The cleanup of the OMC Plant 2 site is not contingent on the harbor cleanup action being separately pursued simultaneously by area stakeholders. However, alternatives 4B and 4S potentially offered a secure management area (containment berm) for some of the targeted harbor dredged spoils, if needed, when that work is performed. It was recognized that should each of the two projects proceed, some cost efficiencies could be realized by combining the disposal on the OMC Plant 2 site.

- b. It seems that everyone is concerned about the PCBs embedded in silt at the bottom of the harbor and not one word has been mentioned about mercury or any other toxic waste that is lingering (in the harbor) along with the PCBs. Assuming the harbor is dredged and sediment placed in the combined containment areas, we have the potential to create a toxic waste dump having no liner or cap other than clean topsoil. How long will this site be allowed to accept chemical laden sediment? Is it going to be completely sealed before the construction of the condominiums?

Response: U.S. EPA has selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media, decreasing the potential to create a "toxic waste dump having no liner..." at the site. Note: testing has shown that the sediment targeted for removal from the harbor under a separate cleanup action does not contain high levels of mercury or other toxic materials. Even the PCB levels are not especially high it's just that the present PCB levels help create a problem by accumulating at unsafe levels in harbor-caught fish.

- c. This containment area is in very close proximity to the beach and (would be) residential areas. I am also concerned that 12 inches of clean topsoil is [not]

adequate. It was mentioned that the height of the bermed containment area would not exceed 20 feet. Depending on the slope of the berm, erosion could cause pockets of the 12 inches of topsoil to vacate.

Response: U.S. EPA has selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media and therefore no containment area would be constructed.

- d. Removal of the concrete floor will allow rainwater and snowmelt to push the VOCs (TCE and vinyl chloride) out of the concrete capped contained area that they are currently stable. I am aware that this will be addressed as a separate issue and quite possibly the groundwater might relocate the VOCs before action is taken. Is it possible they should be pumped out before the concrete floors are removed?

Response: While we agree that removing the PCB-laden concrete during the proposed building demolition action would result in increased infiltration of rain and snowmelt into the groundwater contaminant plume, we believe that immediate removal of the concrete is a more effective step because it frees up the site for more effective groundwater cleanup actions. A groundwater pump-and-treat action would likely take decades to complete, so it would not be practicable to wait to remove the concrete until after the groundwater contaminant plume is pumped out.

- e. As I understand the proposal, it does not include removing, reshaping or dredging the north or south ditch. I would be concerned if the ditches were altered without replacing the alteration with matching soils and fauna.

Response: Our proposed cleanup plan does involve cleanup of the North Ditch and the South Ditch with backfill of clean material to replace removed material. We will try to perform the work while preserving or replacing affected plants and animals found at the site.

- f. Lastly, I am aware of a group of bacteria being used at 17 polluted sites in 10 states to biologically remediate the presence of PCBs and TCE. I trust you are aware of these techniques as well. Hopefully, these new techniques will be used here, if suitable. " [via e-mail]

Response: U.S. EPA agrees. The goal behind our groundwater pilot studies now underway at the site is to discover which *in situ* groundwater cleanup method is the most efficient in stimulating the naturally-occurring bacteria in the groundwater to clean up (consume) the TCE and its breakdown products (DCE and vinyl chloride).

4. Susan Smith, IL: "I strongly propose that an in depth evaluation into Plant 2 and the cleanup of 1992 be examined." [via e-mail]

Response: U.S. EPA performed an in-depth study into OMC Plant 2 during the 2004-2006 remedial investigation.

5. Anonymous, IL: "I understand the cleanup, but is there a reason why I see City workers cutting hazardous materials out of the basement of the building already? Shouldn't there be a safer way to have this done, besides our un-trained for hazardous materials city workers? ...I think this should be addressed before someone gets hurt and sick." [via e-mail]
6. Anonymous, IL: "...should city workers, who are not trained in dealing with contaminants and the risks/hazards of said toxins, be removing metal pipes from the remaining basement of the OMC building...?" [via fax]

Response: These comments refer to the demolition work the city performed on the "clean" portions of OMC Plant 2 in 2006. Because we tested these areas of the former facility and found them to be clean, we had no reason to prevent the city from having its workers remove the piping from the (clean) basement areas. In addition, at our recommendation, one of the city workers attended a standard 40-hour hazardous materials health and safety training course, so perhaps not all workers are untrained for this type of work from a hazardous materials health and safety perspective.

7. Jeffery Camplin, Mundelein, IL: "I have the following comments regarding the proposed cleanup of contamination at the OMC [Plant 2] site in Waukegan, Illinois.
 - a. The landfill proposed for the disposal of PCB contaminated building materials does not meet the requirements of a subtitle D landfill. There is no bottom liner. This landfill should meet the minimum requirements of a subtitle D landfill due to the proximity of this disposal site to proposed public access areas and residential areas. There was also discussion of possibly disposing of PCB contaminated sediments from Waukegan Harbor in this waste disposal site. The PCB contaminated sediments would require that the landfill have a liner and meet the minimum requirements of a subtitle D landfill. I understand that you believe USEPA does not have to comply with state of Illinois requirements for subtitle D landfills under the authority of a Superfund site. However, the close proximity of this landfill to groundwater, public/residential areas, and possibly accepting waste not covered by the Superfund exemption would require compliance with subtitle D landfill requirements to be protective of human health as well as in compliance with state and federal solid waste regulations. Your proposed cleanup plan does not take these issues into consideration. Your plan is merely

based on the cheapest costs and not on protective measures based on the long term property use and future public health issues.

Response: U.S. EPA has selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media, so no containment cell will be built at the site to hold the material.

- b. The proposed soil cover over the onsite waste disposal site is only 12" thick. The soil cover proposed for the PCB contaminated building debris should be at least 36" thick prior to allowing public access to these areas. A 12" cover can be easily penetrated and does not provide enough protection if the public will have access over the landfill site. There should also be a restriction on the types of vegetation that can be planted in these areas to ensure that the protective cover is not compromised.

Response: U.S. EPA has selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media. Excavated areas will be backfilled to grade with no restrictions on types of vegetation that can be planted.

- c. You mentioned at the January [18, 2007] Waukegan CAG meeting that you are aware of asbestos contamination at the OMC beachfront and have taken steps to notify remediation contractors of the presence of this contaminant so they may protect themselves during remediation. However, asbestos is not mentioned in any testing or risk evaluation studies performed by USEPA to ensure the cleanups are protective of human health. What asbestos studies have been conducted by USEPA to ensure that the asbestos contamination present in the OMC site 2 cleanup remains protective of human health once remediation is complete?

Response: An asbestos (and lead) assessment and abatement program will be enacted before we begin the OMC Plant 2 building demolition work in accordance with the substantive requirements of state regulations. The city performed this same step prior to the demolition of the "clean" parts of the building in 2006. We performed no asbestos sampling in the soil and sediment outside of OMC Plant 2 during the remedial investigation because OMC did not generate asbestos-containing wastes.

- d. The North Ditch on the OMC [Plant 2] site discharges PCB contamination across public beaches directly into Lake Michigan. This discharge was found to be a potential source of elevated PCB levels in Lake Michigan fish according to a public health assessment. However, the current proposal for OMC site 2 remediation only addresses a small area of the public shoreline where the North Ditch discharges have occurred. What documentation demonstrates the OMC North Ditch discharge has not resulted in PCB contamination requiring attention from the OMC eastern property line to the Lake Michigan waterline? How was

most of the public beach area and shoreline excluded from PCB contamination cleanup? How was it determined that discharges from the OMC North Ditch are not harmful to human health and the environment if it is a potential source of PCB contamination in Lake Michigan fish?" [via e-mail]

Response: Our proposed plan fact sheet unfortunately did not make it clear that we are targeting North Ditch and South Ditch sediment for PCB cleanup as well as the site soil. We plan to excavate and manage ditch sediment that contains PCBs above 1 ppm and backfill the excavated areas with clean fill. We agree that the North Ditch was a potential source of elevated levels of PCBs in Lake Michigan fish until OMC cleaned up the harbor and the areas around OMC Plant 2 in 1990-1992 to the designated 50 ppm PCB cleanup level. Once this cleanup was performed a major source of potential PCB contamination to the lake was nearly eliminated. The city's beachfront sampling effort demonstrated that residual PCBs exist in the duneland area, so we performed a removal action in part of the dune area in 2006 (with a nominal cleanup target of 10 ppm PCBs) and will address the rest during the selected soil and sediment cleanup action (Alternative 2S).

8. Carolyn Brode, Waukegan, IL: "I am thrilled to see the federal government using my tax dollars to help clean up OMC! Waukegan's harbor and lakefront must be cleaned up and made safe again in order for Waukegan (a blighted community and downtown) to make the needed "comeback" – Waukegan rejuvenated means our precious lakefront will be usable again and means more jobs and a great taxable base in the long run." [via mail]

Response: Thank you for your support.

9. William Muno, Evanston, IL: "I have a concern that the preferred alternatives, 4B and 4S, are linked to the GLLA [Great Lakes Legacy Act] clean-up of the Harbor. The timing of both projects is dependent on funding which has not been fully confirmed at the present time. This directly impacts the "Short-term Effectiveness" of this project. I would differ that alternatives 4B and 4S fully meet this criterion.

Alternatives 2B and 2S would eliminate this potential scheduling problem with an approximately 10% increase in the cost. A 10% cost increase is probably within the accuracy of the preliminary cost estimates from the RI/FS." [via mail]

Response: U.S. EPA has selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media. As suggested in the comment, this effectively decouples any potential harbor cleanup actions from the OMC Plant 2 cleanup actions.

10. Patrick Gallagher, Beach Park, IL: "The proposal from the USEPA for the cleanup of Outboard Marine Corp. (OMC) Plant 2 in Waukegan Illinois is well thought out and comprehensive in scope. The cleanup project is vital to the health and safety of all residents in Waukegan and it is also vital to the economic viability of our community. As a former employee of OMC at Plant 2, I strongly favor an aggressive plan to remediate the ecological problems that currently exist at the site. After review and consideration of the alternatives presented, I agree that option 4B is the most responsible course of action to take." [via mail]

Response: U.S. EPA has selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media. It, too, offers an aggressive plan to clean up the ecological problems at the site.

11. Paul Geiselhart, Libertyville, IL: "Agree with EPA's option 4B and 4S cleanup programs. As part of that program a berm is to be constructed from crushed building materials contaminated with low levels of PCBs. Believe that the berm should be no higher than 12 feet and have soil cover greater than 12 inches of clean soil. If possible I would like to see native cover plants that provide habitat and a food source for birds planted on the berm.

There is also a concern that the city will issue building permits while ground water cleaning is in progress at this site. Concern is that this could make building foundations unstable or foundations slabs crack allowing contamination into newly constructed buildings.

I want to see a goal of 50% of the remediated lake front properties placed in conservation. There is a need for better access to the public beachfront. Walkways or convenient trails are needed to facilitate beach use and access to fishing for the ...residents of Lake County." [via mail]

Response: U.S. EPA has selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media. This will support the growth of native vegetation or trees in the cleaned up areas in accordance with the city's lakefront redevelopment plan.

Groundwater cleanup work is likely to involve *in situ* cleanup methods so that building foundation stability should not be an issue. We will work with the city to factor in the potential presence of groundwater contamination into building designs to help prevent potential infiltration of contaminants into the buildings.

The city is working on a beachfront re-use and protection plan that may contain the elements you describe above (walkways or trails, protected areas). Please contact the city for further information.

12. John Moore, City of Waukegan, IL: "We have reviewed the first cleanup plan proposed as a result of U.S. EPA's RI/FS findings and offer the following comments for your consideration and review as you further develop the Proposed Clean-up Plan.

- a. We appreciate that U.S. EPA has incorporated into the cleanup plan the future residential and recreational/open space land use plans for the OMC site, as defined in the City's Downtown and Lakefront Master Plan. We recommend that as the remedial design/remedial action (RD/RA) plans are developed that the remedy be cognizant of performance-based approaches that may be implemented concurrently with site demolition and phased redevelopment of the site by private sector developers and contractors. While following the overall concepts in the U.S. EPA's first Proposed Plan there may be opportunities to streamline, enhance, or economize the cleanup utilizing the U.S. EPA Explanation of Significant Differences process.

Response: U.S. EPA will work with the city to enhance or streamline the OMC Plant 2 cleanup actions during the remedial design and remedial action process.

- b. Under separate cover, we will send you a copy of the City's draft Eco-Park concept plans. Any on-site disposal and containment remedy must take into account these future site development plans. We have developed our Eco-Park concepts with a cognizance of some on-site disposal/containment, but continued coordination of design will be essential as each plan moves forward. Less emphasis should be placed on creating a disposal area to accommodate Waukegan Harbor dredge sediments, as that disposal alternative is no longer being sought in the Great Lakes Legacy Act project.

Response: U.S. EPA understands that dredged harbor sediments are now targeted for off-site disposal in a Subtitle D landfill and not for containment at the OMC Plant 2 site. Also, we have selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media so we would not be constructing a containment area on-site as contemplated by Alternatives 3S, 3B, 4S, and 4B.

- c. We recommend that U.S. EPA's on-site disposal berm area of the OMC site consider the use of a 24" to 36" soil cover system to better accommodate passive recreational/open space uses and to withstand the long-term natural effects of erosion by wind and storm water runoff and animal burrowing that we experience on the lakefront. We recommend that a bottom liner system also be considered in the on-site disposal area.

Response: U.S. EPA has selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media so no containment cell will be built at the site.

- d. We request that U.S. EPA consider DNAPL source (free product) removal work be incorporated into this First Cleanup Plan work rather than postponed to the future groundwater cleanup plan. Free-product removal is an important first step in reducing mobility and toxicity risks at the site and will result in a lower cost groundwater remedy.

Response: Our groundwater treatment pilot study work now underway at the OMC Plant 2 includes DNAPL treatment as well. We agree that site DNAPL areas should be addressed first before a final groundwater remedy is enacted to remove future sources of groundwater contamination, helping to lower overall groundwater cleanup costs.

- e. Based on our experience in recently completing demolition of the OMC East Die Cast building, we believe U.S. EPA's demolition cost estimates can be reduced by additional processing and recycling of building and roofing materials. All alternatives to specialized demolition contractor processes for decontamination, processing, and material recycling/disposal should be available for implementation within the RD/RA plans.

Response: U.S. EPA agrees to consider all methods to economically and effectively clean up the OMC Plant 2 building.

- f. The City continues to request that U.S. EPA consider incorporating alternate treatment/disposal plans for the existing East and West PCB disposal cells into the permanent site-wide remedy for the OMC Plant 2 site.

Response: U.S. EPA agrees to consider this request.

B. Oral Comments (from the January 11, 2007 public hearing)

1. Tony Figueroa, Waukegan, IL: "There's some confusion [here] ...the lady asked about containment cells. The EPA has years of experience in the design of containment cells...this is not something new; we have been doing this for years. The containment cell is an effort to be able to solve some of the issues otherwise it's very, very expensive. It can go into millions and millions of dollars hauling that stuff to a landfill site, so if you could reiterate the number of years that the EPA has on the design of containment cells and that they are safe.

Response: We agree that the containment cells are safe. The OMC cells have been in existence since 1992 and have not leaked or been breached.

2. Peggy Grady, Waukegan, IL: "I guess I'm opposed to [potentially allowing for the containment berm to hold dredged spoils from a harbor cleanup action], because I don't know if I necessarily want the harbor to be dredged [deepened], because if Waukegan is going to be turning the lakefront into a recreational and residential area, we don't -- I don't think we would want this harbor dredged so we can have those large ships coming in."

Response: U.S. EPA has selected Alternatives 2S and 2B to clean up OMC Plant 2 soil and building media, thus cleanup of the site is not linked to the potential harbor cleanup action.